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PREFACE

This issue of the Journal contains the papers discussed at the Sixth Annual Conference of the Orissa Economics Association held at Panchayat College, Baragarh, on 2nd and 3rd March, 1973 and the address of the President of the Conference. The following subjects were selected for discussion in the Conference.

1. Strategy of Fifth Five Year Plan of Orissa.
2. Economics of Rural Electrification in Orissa.

Besides the papers discussed in the Conference, a few more papers have also been included in the issue. We thank all the persons who contributed papers and took part in the discussions of the subjects in the Conference.

B. Misra
Editor

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PRESIDENTIAL ADDRESS
Sixth Annual Conference

Reorientation of Planning to Fight against Poverty

(With particular reference to Fifth Five Year Plan in Orissa)

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The basic goal of Planning in India has been rapid increase in the standard of living of people through measures, which also promote equality and social justice. Besides organising efficient exploitation of the resources of different regions to increase production and to enhance the growth rate of the economy, planning is expected to result in greater equality in income and wealth, by progressive reduction in concentration of incomes, wealth and economic power. It is expected that benefits of development would accrue more and more to the relatively less privileged classes of society. In particular, the policy has been oriented to promote the economic and educational interests of the scheduled castes and scheduled tribes and other weaker sections of the society.

Rapid economic development which is so oriented towards establishing social and economic justice, must necessarily involve refashioning of socio-economic institutions. It should mean that major economic decisions and policies regarding socio-economic relationships have a social purpose and that there is devolution and decentralisation of functions and scope for experimentation. There must arise a growth of feeling of participation of the small man, the promotion of enterprise among the less privileged classes and the creation of a sense of involvement in the transformation of society among all sections of the community. Unless this is evolved, faster rate of growth of national income will not produce higher living standards for the poor. The point needs emphasis in the context of

the Fifth Five Year Plan. The economy now has reached a stage where larger availability of resources makes it possible to launch a direct attack on unemployment and poverty, and also assure adequate growth. This is possible only by implementation of spcific selective programmes of development at the grass-roots level and not through sectorial planning at the macro-level. In the earlier plans in India, Mahalanobis strategy of developing a heavy industries investment complex, based on Soviet Russian model of development, was resorted to. But it failed to produce consumption goods so very necessary for the common man. The mechanised light machinery which the heavy industry complex produced, actually in turn has produced luxury and semi-luxury manufactures. In effect, what has happened in India, during the last 20 years cumulatively, was that the industrial sector producing luxury and semi-luxury goods not only deprived the heavy industry sector of its physical resources and stunted its growth, but it has also denied to other industries its due share of capital for producing equipments for production of consumer necessaries. The strategy of planning adopted in India so far has been neither helpful to long run economic growth nor to short run social justice and social welfare. It is not capable of being applied extensively, for production of certain industrial raw materials in the form of cash crops and the consumer necessaries like food-grains, as the mechanised mechinery produced as a result of heavy industries investment, cannot be widely used for the purpose.

The Community Development Programme which has been evolved as a method of integrated development of the rural areas has never been made an integral part of the programme of agricultural production necessary for the industrial sector as it has remained purely as a peripheral activity. At present, most of the infrastructure like national highways, railways, air-ways, banking facilities, etc. have been helping the sector for production of luxury and semi-luxury consumption goods. Our fiscal policy also has not been helpful for investment in activities which would produce the goods necessary for the common man.

In the context of land-man ratio in India and inferior techniques of production and large degree of non-employment and in the absence of an initial large agricultural surplus, the Mahalanobis two-sector model appears to be inapplicable to our conditions. Hence a strategy substantially different from the Mahalanobis model

is needed for reconstructing our future plan framework. What we need to-day, in order to reshape our strategy, is that we should have heavy industry sector reproducing itself at a faster rate by ploughing back into its own expansion as much of its physical output as possible, and diverting as little as possible towards the consumption goods sector. We should depend for consumption requirements upon another sector, with less mechanised machines for the production of consumer necessaries. The latter sector must be one which can be brought within the fold of the present Community Development Programme in rural and urban areas. Thus the Community Development Programme must become the column which shoulders the burden of entire consumption requirements of the growing economy and one which exists for the production of the necessary consumption goods.

The chief defect of the present system of Community Development Programme is that the blocks are selected for administrative convenience or under local political pressure and are not based on the scientific study of micro-level economic zones. There is, of course at present, recognition of the functional integration of a region; but what is lacking in it, is the concept of spatial integration. The most glaring defect is its total compartmentalisation into urban and rural. The blocks are designed to be outside urban centres and vice versa. The towns which could regenerate the rural areas by acting as the focal points for development and employment have been left out of the picture. What is worse is that block headquarters have been set up to compete for the same functions which the towns are already providing at minimum costs. Again the Community Development movement looks to development of each village individually. This is incorrect, as fuctionally the boundaries of a contemporary village go far beyond those of the revenue unit. Our villages are interlinked with each other by economic ties. It is more realistic to consider a cluster of villages with a large village or a town in the centre as one community. It is impossible to stress the large scale industrialisation and mechanisation and commercialisation of agriculture on one hand and uphold the integrity of our traditional villages on the other. The revenue village is too small in population base and in resource base to sustain development projects. The delineation of the community boundaries should, therefore, be based on scientific studies. The linking of villages, regions and sub-regions also need to be identified on the basis of such studies. These

are, again, not necessarily identical with the existing boundaries of blocks and sub-divisions. In identifying a region, the totality of development process should be taken into account, as the urban and rural parts are integral parts of one developing process. If it is found by scientific study, that the rural communities consist of a cluster of villages, then a search should be made for the focal point of this cluster, the central village or the town which should be the growth centre where development investments can be located. The hinterlands of such growth centres need not necessarily coincide with the existing administrative boundaries. The growth centre as well may be a small town or a big village surrounded by a number of villages thus forming a growing area. In such an area, the medium scale industries should be in the town, the servicing centres for equipments and the small scale industries could be in big villages and the cottage industries, and small mechanic work-shops will be predominantly in the small villages. The infrastructure for the organisation would be provided by the Govt. as a vital part of production plan. The primary concern of the administrative structure should be to provide the growing region vitality in the dynamic programme of development and to distribute benefits of development among the entire population.

What is, therefore, necessary, is an integrated area development, an appropriate location of social and economic activities over physical space for the balanced development of the region. We do not have enough resources to provide all services and all development programmes to all settlements. Further, we need quick returns for all our investment to build up the capital supply for further investment. The pace of growth in agriculture needs a free flow of credit and other inputs such as improved seeds, fertilisers, pesticides, machines and technical knowledge. The locational importance of banks, co-operatives and extension agencies for the most efficient and economic distributions of these inputs cannot be overemphasised. Further, other services like education, health and communication which have remained at a primitive stage of development in the rural areas, will have to be activated and services for satisfying the needs will have to be properly located. It is for these reasons that a locational plan for the entire agriculture infrastructure should be the first essential step in the next phase of planning because the inter-relationship of socio-economic activities depends a great deal on where they are located.

The present macro-level planning which starts at the national level, provides a broad frame-work of national priorities. Macro-economic projections can serve our purpose provided (a) we have adequate and accurate data, and (b) provided the various sectors of the economy are properly inter-related. But since we have neither, it does not serve our purpose. A set of micro-level plans, therefore, can help to fix priorities for different regions depending upon their specific needs. The idea of a micro-level plan is not limited to any particular settlement. It takes a whole hierarchy of central places and its hinterland as its focus. The emphasis in micro-level planning is planning from the lowest level upward to a clearly defined region which may or may not be co-terminus with the present boundaries of a district. In most cases, a district will provide a suitably large enough area for planning, although it may not necessarily be identical with a region, though in the long run, if all districts are properly planned, planning regions will emerge from contiguous districts. One advantage of the districts will be its well integrated administrative structure for implementing the micro-level plan. But before adopting the district as a unit, the present structure of administrative district should be done away with, where necessary, by forming new planning districts based on economic integration of a particular area. There is some justification, therefore, of the present tendency in Orissa to demand conversion of various sub-divisions into different districts. This is not a tendency towards regionalism but this is certainly a manifestation of a desire for formation of planning districts (not administrative ones) for integrated area development and for micro-level planning. These planning districts would in future certainly grow into growth centres, suitable for micro-level planning.

In Orissa, 76% of its population are engaged in agriculture and the agriculture sector is responsible for more than 50% of total state income. But productivity in agriculture in Orissa is the lowest in the country. Rice which is the principal crop of the State, registered a very low yield of 960 kg. per hectare during 1970-71 as compared to the all-India average of 1,134 kgs., 1,974 kgs, in Tamil Nadu, 1,725 kgs. in Punjab and 1,369 kgs. in Andhra Pradesh. Therefore, the Fifth Plan's main thrust in Orissa should be to give a big push to agricultural development. Its aim should be to double the present production trend of 60 lakh tons of food grains anticipated at the end of the Fourth Plan, besides increasing the production of

commercial crops. The new strategy of agricultural development in Orissa during the Fifth Plan period should consist of measures for (1) increasing the irrigation potential, (2) creation of resource base and infrastructure in villages to ensure adequate and timely supply of other inputs like credit, chemical fertilisers, pesticides insecticides, improved implements, etc., (3) availability of timely and adequate information on agricultural technical know-how, (4) better marketing facilities and better storage facilities, (5) linking production with price policy and with transport and communication facilities, (6) multiple cropping, (7) opening of information units and demonstration units for educating the different categories of farmers, (8) arranging exhibitions and fairs at different levels and thus helping to bring research workers and farmers face to face, (9) inducing the farmers for the establishment of agro-based industries and bringing about wider use of rural electricity and (10) bringing about an economic size of the farm through suitable land reform measures.

I have kept irrigation at the top and land reforms, last of all, in the above list of measures purposely. First of all, it is essential that all priority should be given to schemes for use of surplus ground water by development of medium, minor and lift irrigation facilities in different parts of Orissa, besides integrating all the irrigation system at present existing in the State. A net-work of lift irrigation projects should receive topmost consideration and the proposed outlay of Rs. 282 crores envisaged in the proposed plan of Orissa should be doubled so as to remove existing regional imbalances in this respect. It is necessary that every possible resource should be utilised to secure at least 50% of the net area shown under irrigation projects as against 12.8% at present, which is much less compared to all other states in India, so that agriculture in the state can be insured against drought. In this respect, private investment should be encouraged in lift irrigation, well and other small projects and state loans and bank loans should be given liberally for this purpose. Secondly the new strategy of development of agriculture must not only give attention to rabi crops and drought resistant varieties of food crops, but it must also emphasise production of commercial crops like oil seeds, sugarcane, jute and cotton, wherever possible. As it has been pointed out by the Bureau of Statistics and Economics, the growth rate of food grains production during the last ten years 1961-71 has been only 1.93 per cent as against the growth rate of 10.74% of non-food crops and this growth

in food-grains is again due to the growth in area and not because of productivity, as it is found that the productivity of food-grains during the last decade has actually registered a negative growth. The index number of agriculture productivity of food grains has exhibited a downward trend which is a matter of great concern for an agricultural state like Orissa. This is, of course, due to crop failures on account of natural calamities which have visited the state as many as 5 times during this period. It is, therefore, necessary to enlarge the irrigation potential and suitably change the cropping pattern during the Fifth Plan period in order to ensure the higher growth rate in agriculture. Due emphasis should also be given by the farmers to cultivation of each crops and rabi crops as it is found at present in Orissa, that rice and other cereals grow in disproportionately. The general level of prices is now 8.5% higher than the level at this time of last year. But the burden on the common man is even greater, because food articles as a whole have gone up in price by over 14%. It is only because of appreciable decline in the prices of industrial raw materials and comparatively small increase in the prices of machinery and manufactures, that it has been possible to hold down the increase in general prices to 8.5%. It is, therefore, necessary to concentrate immediately on increase in the output of food articles other than cereals such as pulses, sugar, milk, fish and eggs to prevent any further increase in prices besides of course taking overall measures by the Government to decrease the growth of money supply. Unless the price level comes to a steady decline, the common man can never be benefited and this is more a concern of the policy of the Central Government and not State Government. In its review of the economy in 72'-73', the National Council of Applied Economic Research says that the unprecedented price rise in 1972 had a sharp and disturbing impact on the people and unless the economic policies in 1973 secure the strengthening and spreading of the Green Revolution, the economy would result in still lower growth rates. The monsoon failures of 1972 whose effects have dominated the economic scene should not be allowed to distort the agriculture strategy which is at present based on spread of irrigation facilities as well as application of new techniques.

Other schemes of agricultural development in Orissa should include measures for soil and water conservation, plantation of economic species like cashewnuts, pineapples, etc., plantation of quick growing species of forests in the longer coastal belt of Orissa,

increased poultry farming and dairy-farming practices, etc. Unless the per capita consumption of milk is increased from 53 grams to 100 grams and per capita availability of eggs increased from 11 to 50 per annum, minimum health and nutrition requirements of people in Orissa can never be ensured.

In Orissa, majority of the cultivators are small farmers who function more as individuals than as organised groups. With real power in hands of well-to-do people in villages, the small farmers seldom have access to technical and financial assistance provided by the government or the banks. Credit and other inputs required for improvement of cultivation are not easily available to the cultivators. The normal extension machinery has so far failed to provide the required help and guidance. Administrative reforms and institutional arrangements are, therefore, necessary on the eve of the Fifth Plan, in which the small farmers would themselves take the initiative for development. It is essential to improve the decision making ability of such farmers, that is making them prone to change, willing to take risk and creating dissatisfaction with present state of affairs. This is possible only by a plan of integrated area development and micro-level planning which will combine the advantages of increasing provision for service facilities, such as health and education, strengthening of the agricultural infrastructure of distribution of inputs, marketing, storage and processing and the provision on non-agricultural employment opportunities in the rural areas.

At present land reform is given much importance and is accepted as a major solution for problems of unemployment and low production in rural areas. No doubt, redistribution of land will reduce the poverty of the rural landless to some extent. The Japanese example has shown that the land reform measures (consolidation of holdings, conferment of occupancy rights, fixation of ceilings, etc.) have given incentive to farmers to introduce better methods of production and improve their living standards. But mere transference of ownership will not provide effective employment opportunities. We must take into account resources necessary to make land yield meaningfully. The agricultural infrastructure of credit, implements and others inputs must be readily available on easy terms for the new owners, in the absence of which land will again gravitate towards those who have resources. It is, therefore, necessary to have

locational plans for the entire agricultural infrastructure which is more important than the land reform.

The experience of other countries, notably Taiwan, has shown that the success of land reform programmes partly depends on a concomitant process of industrialisation. Within a democratic framework as in India, and a free market economy, many small farmers will fail to compete with the big farmers and will be ousted out of farming. Only employment opportunities at the various levels of small scale, cottage and agro-industries in the rural and nearby urban areas, will provide an alternative for those small farmers who will fail to make adjustment. A planned programme of urbanisation and industrialisation based on a locational model is, therefore, needed for complementing the land reform programme so much talked of by politicians at present.

So far, too many and too frequent changes have been made in our approach to agricultural development. We have gone through at least three distinct phases in our efforts towards agricultural planning and growth. In the initial phases, the emphasis was on expanding the infrastructure such as multi-purpose irrigation and power projects. In the next phase, stress was laid on blanketing the entire rural landscape through extension activities as reflected in the Community Development Programme. In the last phase of the new agricultural strategy, certain areas and economic groups are picked out for intensive growth. During each of these phases, the expectation was for the emergence of an indirect pay off covering the totality of agriculture. But in reality the original assumption has never been fulfilled. One of the missing links has certainly been the rural masses, who by and large, have been left out of the planning process. The scientifically selected growth centres at various levels and micro-level planning which would emerge when planning is reoriented would help not only to decentralise economic activities, so that the benefits of economic development are shared by all groups and all regions but it would also help to consolidate resources for development in selected areas so that the development process is not hampered for lack of resources.

In Orissa, in the planning process, various imbalances have emerged in the development of various regions within the state. The status of the relatively backward tribal population

constituting 38% of the total population of the state, still remains at the lowest level. It has been estimated that 20 million people i.e., 71.5% of the total population of the state subsist on a per capita income of Rs. 20-00 and below. Whatever indication of development we take up, whether (1) value of material production total or per capita, or (2) consumer expenditure per person, rural or urban or (3) density of population per square mile, or (4) employment in organised industries, or (5) infra-structure development, Orissa presents a sad contrast with other growing states in India. Unless this economic gap between poor and rich states is narrowed down and unless the regional economic differences inside the state are removed, there will be continued political unrest and vociferous tendencies inside the state, which may hamper the very process of planning and growth. The problem can be tackled only by proper identification of the backward areas and bringing about a functional integration between such areas, economic activities and markets. Projects should be chosen to develop the economy in its spatial dimension and in such a way, that the total needs of individual regions are correlated with national objectives and weaker sections of the society, like Scheduled castes and tribes, are brought into functional relationship with the rest of the community. Unless the old colonial nature of artificial relationship between urban and rural areas is brought to an end by a suitable policy of integrated area development and unless the new projects of development are located in the growth centres and backward areas and the local people are given adequate opportunities to participate in the development process and unless Agriculture in Orissa is made productive and employment-oriented by giving a big push to irrigation and infrastructure potential, the Fifth Five Year Plan in Orissa with the proposed huge investment of Rs. 4000 crores and vast sectorial investments will not make any difference to the existing standard of living of the people in Orissa.

Let us not forget that the Fifth Five Year Plan is going to make a war on poverty. Since the causes of poverty are multifarious and the poor are mostly concentrated in our rural areas, there should be broad, direct and frontal attack at the root causes of poverty. In brief, the antipoverty programme whether in India or Orissa should include measures :

1. To accelerate the rate of economic growth so as to provide more jobs and raise the standard of living in general and in particular, of the weaker sections of the society;

2. To reorient the plan framework so as to improve regional economics and provide adequate opportunities to backward areas and people to integrate functionally with the rest of the community;

3. To rehabilitate urban and rural communities in an effort to eradicate slum areas and provide adequate housing, educational, hospital, transport and communication facilities in an effort to create a new environment among less-privileged classes;

4. To give topmost priority to development of agriculture by immediate increase of irrigation potential and infrastructure facilities and multiple cropping;

5. To enlarge job opportunities for youth through vocational education and creation of youth employment programmes;

6. To open agro-based industries, cottage and small scale industries in rural areas to provide employment to rural people;

7. To fight all kinds of discrimination in regard to employment to facilitate minority groups and backward sections of the society;

8. To improve the health standards by providing adequate medical care for the poor to help to reduce illness, malnutrition and chronic disabilities as a cause of poverty;

9. To expand educational opportunities in order that children of poor and backward families can be given the skills and motivation to break the poverty cycle, and lastly;

10. To identify backward regions and areas by proper scientific survey and effect integrated spatial development of such areas through a network of growth centres, bringing among the people, at the same time, a sense of involvement in the process of development.

Contribution of Major Revenue Earning Sources to the State Budget of Orissa 1936-37 to 1970-71 : A Trend Analysis

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I. Introducti

Before the Montague Chelmsford Reforms of 1919, there was no provision for division of financial resources between the Centre and the provinces. All earnings whether they accrued from land or from customs or from any other source were treated as revenues of the British Crown. From 1912, however, a working division of revenues called the system of divided heads of revenue was introduced under which provinces could levy limited taxes. Yet the Centre had almost the complete control of all taxation in British India and any proposal for provincial taxation required the sanction of the Government of India, and approval of the Secretary of State for India, before it could be considered by the provincial Governments. The provincial Governments had also no independent power of borrowing. The financial system was essentially unitary in character.

The Montague Chelmsford Reforms moved towards a kind of division of functions and finances. Subjects were classified into Central and provincial. Land revenue, irrigation, excise, forests, judiciary and stamps were transferred to the provinces while customs, other stamps, receipts from railways, salt, opium and posts and telegraphs were retained under central heads of revenue. Under the Government of India Act, 1935, income tax and corporation tax were made exclusively central sources of revenue; But agricultural income tax was made a provincial source of revenue. As the provinces were expected to be frequently in deficit, a system of sharing of income tax was contemplated. It was also laid down that salt, excise and export duties would be shared between the centre and the provinces as and when necessary.

This was the financial system which Orissa inherited at the time of Independence of the country. The intervention of the 2nd World War had increased substantially the expenditure and the receipts particularly of the Central Government. But the system remained the same. Certain adjustments nevertheless were made from year to year in the provincial budgets within this broad frame work.

II. Change over years

Orissa became a separate province on the 1st April, 1936. From 1936-37 till Independence (1947), the pattern of the provincial budget remained more or less the same. The concepts of welfare administration and planned development became important components of public policy after Independence and the launching of the First Five Year Plan. This policy had a perceptible impact of both the quantum of tax and non-tax revenues and the contribution of various revenue sources to the State's total revenue. That the picture changed substantially would be evident from the fact that the total revenue receipts of Orissa went up from Rs. 1.69 crores in 1936-37 to Rs. 135.80 crores in 1970-71. The relative status of different sources of revenue had also undergone marked changes. This will be evident from Table 1.

III. Taxes, duties and other principal heads of revenue

Land revenue, State Excise Duty and stamps were the major sources of revenue under this head which together contributed about 97% of the total revenue received in 1936-37. Out of the amount of Rs. 1 crore received from taxes, duties and other principal sources of revenue in 1936-37, about Rs. 50 lakhs were received from land revenue alone. The next in order of importance were State Excise Duties and stamps, the former contributing about Rs. 32 lakhs and the latter Rs. 17 lakhs. The details of sub-headwise earnings under the major head-Taxes, Duties and other principal heads of revenue may be seen from the Table 2.

By the time of achieving Independence, there was three-fold increase in the total earnings from this head with State Excise Duties providing about 43% of the total earnings. Taxes on income other than Corporation taxes which was practically insignificant in 1936-37 contributed about Rs. 89 lakhs in 1947-48 which was about 28% of the total earning from this major head. Land revenue occupied the third important position. However its quantum of contribution remained almost the same in 1947-48 as it was in 1936-37 i.e. about

Rs. 50 lakhs. But its relative share declined from 48% to 16% of the total revenue from this major head.

The total earnings from this major head began to increase over the Ist and 2nd plan periods and in 1957-58 it reached Rs. 9 crores level. But the composition of different taxes followed more or less the same pattern except for the fact that the relative position of State Excise Duties began to decline rapidly after 1947-48. Whereas 43% of the total earnings from this head was being contributed by the State Excise Duties in 1947-48, the contribution came down to 11% in 1957-58.

In the early parts of the Third Five Year Plan, i. e. in 1962-63 the total earnings from this head was about Rs. 17 crores, the significant contributor to this increased revenue being the State Sales Tax which provided Rs. 5.5 crores to the State Exchequer in that year.

The total earnings continued to increase over the Third Five Year Plan and the Three Annual Plans. By 1970-71 about Rs. 47 crores were being earned from this account and among different sub-heads sales tax was the major contributor accounting for about 38% of the total earnings. Next in order of importance were the "taxation of income other than Corporation tax" and the State Excise Duties, which were contributing about 29% and 9% respectively of the total earnings.

IV. Contributions and miscellaneous adjustments

The next important revenue earning item is classified as "Contribution and Miscellaneous adjustments". This major head includes earnings from the State share of Union Excise Duties, Grant-in-aid from Central Government, Miscellaneous adjustments between the Centre and the State Government, dividends and other earnings from commercial and State Government undertakings and taxes on railway fare and miscellaneous contribution. Table 3 gives the details of the individual contributions from these items.

The earnings increased from a mere Rs. 51 lakhs in 1936-37 to about Rs. 56 crores in 1970-71. But in terms of relative position, its share in the total revenue receipts of the State has not shown any marked increase. In 1936-37 it accounted for about 30% of the total revenue receipts of the State, and in 1970-71, the percentage increased to 41. In between these two years the relative share has fluctuated widely from a very low of about 8% level in 1947-48 to a very high of 50% level in 1966-67.

The Grants-in-aid from the Central Government contributed the lion's share of revenue since Independence. At the time of creation of the separate province of Orissa, however "miscellaneous adjustments between the Central and the State Governments" was contributing about 98% of the total earnings from the head. This miscellaneous adjustment related to contribution from the Central Government on account of administration of the Explosive Acts, Indian Arms Acts, Rice Milling Industries Regulation Act, Carbide of Calcium Rules, Cinematograph Film Rules and Petroleum Acts.

In 1947-48 grants-in-aid from the Central Government accounted for about 87% of the total earning from this major head followed by State share of Union Excise Duties which accounted for about 13% of the total earnings. The Misc. adjustment between the Central and the State Governments which was the major source since 1936-37 became practically insignificant.

This broad pattern continued till 1970-71, with some fluctuations in the relative share of the two major contributors over the years. It may be noted that the commercial and other undertakings did not yield any dividend to the State revenue up to the year 1957-58 and it started contributing a very negligible amount of Rs. 1.62 lakhs in 1962-63 which increased to Rs. 14.31 lakhs in 1969-70. But in 1970-71 it further decreased to Rs. 10.24 lakhs.

V. Miscellaneous

The details of Miscellaneous receipts covering the earnings of famine relief fund, contribution and recovery towards pension and other retirement benefits, stationery and printing, forests and miscellaneous receipts are given in the Table 4 below.

The contribution of this item to the State revenue increased from a little over Rs. 5 lakhs in 1936-37 to about Rs. 9 crores in 1970-71. Because of widely varying earnings from forests and misc. sources, the contribution had been fluctuating particularly in the Third plan and the three annual plan periods. In 1962-63, i. e., in the second year of the Third plan, the income from this source was about Rs. 6.5 crores which was 10% of the total revenue of the State. But in 1966-67 the contribution went down to about Rs. 5.8 crores which was only about 5.4% of the total revenue of the State for that year. However, the total revenue started catching up from 1967-68 and a slow rising trend was discernible.

VI. Administrative services

The major head 'Administrative Services' stands for items such as administration of justice, jails, police, supplies and disposals and Misc. Departments. The collection from these sources are shown in Table 5.

Earnings from this head have increased very slowly from Rs. 1.48 lakhs in 1936-37 to Rs. 62.07 lakhs in 1970-71, i. e. in 34 years the revenue has increased only by Rs. 60.59 lakhs. Its relative position in the tax structure has gone down from about 0.9% of the total revenue in 1936-37, to 0.5% in 1970-71.

VII. Social and developmental services

The contribution from'Social & Developmental Services' although increased from Rs. 2.70 lakhs in 1936-37 to Rs. 538.88 lakhs in 1970-71,its relative share in the total revenue of the State has gone up from 1.60% in 1936-37 to 3.97% in 1970-71. This mojor head covers earnings from education, medical, public health, agriculture, rural development, animal husbandry, cooperation, industries, community development projects and miscellaneous social and development organisations. The earnings from the different sub-heads are given in the Table 6.

The break up of different sub-heads shows the earnings from different items widely fluctuating over the years. Rural Development, Community Development and Miscellaneous Social and Developmental Organisations came to the revenue earning structure of the State at a much later stage (in the beginning of sixties). But since then, they have been making their contribution to the State's revenue.

VIII. Multipurpose river schemes, irrigation and electricity schemes

The contribution from this sources was Rs. 2.68 lakhs i.e. 1.59% of the total revenue in 1936-37. Even after two decades i. e. in 1957-58, the contribution was only Rs. 3 lakhs which accounted for 0.14% of the total revenue of the State. During the Third Plan and the annual plan periods, the earnings were fairly rising and in 1969-70 they were about Rs. 4.9 crores. But in 1970-71 they again declined to Rs. 1.6 crores. The administrative machinery for this programme needs strengthening so that the earning position can be improved. The details of the contribution from this major head are given in the Table 7.

IX. Transport and communication (other than roads)

No income was being received by the State from transport and communication till after Independence. In 1952-53, the contribution of this sources of revenue was about Rs. 3 lakhs which was a mere 0.23% of the total revenue of the State. By 1970-71 the income had increased to about Rs. 3.2 crores which accounted for 2.36% of the total revenue of the State. The trend of earning has been a rising one over the years and there is considerable scope for increasing revenue from this source with effective supervision of the operations. The roads, water transport schemes, ports and pilotage are the sources of revenue under this major head as indicated in the Table 8.

The roads and water transport schemes provide most of the revenue while virtually no earnings are received from aviation, ports and pilotage as the later activities are in an infant stage of development.

X. Public works (including roads) and schemes of miscellaneous public improvement

The quantum of these sources of revenue has gone up from Rs. 1.5 lakhs in 1936-37 to Rs. 98.12 lakhs in 1970-71. The income seems to be fluctuating widely over the years. The earnings in the year 1957-58, which was about Rs. 30 lakhs shows a deteriorating position as compared to 1952-53 when the earning was about Rs. 69 lakhs. The relative position of this revenue in the total revenue structure has gone down from about 0.9% in 1936-37 to around 0.7% in 1970-71.

XI. Debt services

Earnings from debt services are mainly derived from sources like interest on loan, advances by the State Govt., interest released on investment of cash balance, interest on arrears of revenue, interest recovered from the zamindari abolition fund and interest from miscellaneous sources. The earnings from these have gradually increased from rupees 28 thousands in 1936-37 to about Rs. 12 crores in 1970-71. They accounted for 0.17% of the total revenue of the State at the time of formation of the State. The percentage increased to 2.53 soon after Independence (1947-48). By (1962-63) when the Third Plan was on its way, the contribution increased to about Rs. 5 crores which accounted for about 8% of the total revenue. A bumper contribution from

this item was in the year, 1968-69 when about Rs. 14.85 crores were collected which accounted for more than 13% of the total revenue of the State. In the Ist year of the Fourth Plan, i. e. in 1969-70 there was a slight fall in the contribution on this account (14.04 crores). But in 1970-71 it declined further and only about Rs. 12 crores was obtained which was 8.8% of the total revenue.

XII. Extra-ordinary items

Occasionally extra-ordinary receipts from itmes such as sale proceeds of development maps, are received by the State. Except for 1947-48, in all other years the earnings were virtually negligible or nil.

XIII. Summary

To sum up the above discussion it may be stated that the total revenue receipts of the State recorded substantial increase from the year 1936-37. The contribution of different items of revenue have been mostly showing a rising trend except under some items where there had been wide fluctuations. The bad agricultural years and the years with natural calamity have influenced a reduced earning generally under certain items in the following years as they are directly connected with such happenings. Adoption of certain policies like abolition of land revenue has also contributed to the fall of earnings from this source.

XIV. The general trend

Prior to Independence, prudent management of Government fiscal affairs called for confining expenditure to the amount essential for the performance of some very limited Govt. functions, and the raising of sufficient tax revenue to balance the Government's budget. Such marginal approach in public finance reduced the importance of public financial activity and was made to stand outside the working of the economic system. Even in case of depression it was thought that the Government could make the greatest contribution to the nation's economic health by cutting its spending programme to the irreducible minimum. Only in the time of war, deficit financing was tolerated and after the war was over, the debt which had been incurred was to be reduced as rapidly as possible. But the concept of house keeping fiscal policies have undergone a great change in course of time. The State was therefore compelled to raise public savings through fiscal policy by way of raising revenue from different sources. When the province of Orissa was first constituted on

Ist April, 1936, the first budget of the new province had a total revenue of Rs. 168.87 lakhs. In course of time, after the attainment of Independence the total revenue earnings of the State was Rs. 604.31 lakhs in 1947-48 which went on steadily rising till it reached Rs. 135.80 crores in the year 1970-71.

The total revenue of the State in the year 1070-71 has become eighty times those of 1936-37 as a result of change in the concept of the Govt. from a mere law and order state to a socialistic pattern of welfare state. The earnings from different sources have also undergone. changes in different years. Tax revenue has shown a decreasing trend in proportion to total revenue from about 62% in 1936-37 to nearly 47% in 1970-71 with the exception in the year 1952-53 when the Tax Revenue was about 65% of the total revenue for the State. Obviously, the direct Tax which constituted 42% of total revenue in 1936-37 came down gradually to 15% though the proportion of indirect tax has gone up from 21% to about 32% between the year 1936-37 and 1970-71 as may be seen in the Appendix-I. The downward trend in the tax revenue is mainly due to the fall in the earnings from Land Revenue and State Excise duties. The Government abolished land revenue from the financial year 1966-67. In the context of abolition of the land revenue, the Central Government is taking the initiative and getting the concurrence of the State Government to merge agricultural income with the total income for the purpose of taxation. As regards the State Excise Duties, it may be mentioned that it is confined to excise duty on liquor (except medicinal and toilet preparations) and narcotics. As is well known, the introduction of prohibition considerably reduced the importance of this tax which was one of the pillars of the State Finances previously. As a result, the contribution from this source has been reduced from the year 1947-48 till 1968-69 when the earnings have recorded an increase due to the State Government's policy to gradually do away with the prohibition on liquor. There has been a substantial increase in States' share of union excise duties and grant-in-aid from the Central Government on the basis of the recommendations made by successive Finance Commissions from time to time taking into account the internal resources to be mobilised by the State and the development projects in its hand to be executed as per the plan programme.

TABLE 1

Contribution of Major Revenue Earning Sources to the Orissa Budget

(Rs. in '000)

Sl. No.	Major Heads	1936-37	1947-48	1952-53 2nd year of the 1st plan period	1957-58 2nd year of the 2nd plan period	1962-63 2nd year of the 3rd plan period
1	2	3	4	5	6	7
1.	Taxes, duties and other principal heads of revenue.	1,03,78 (61.45)	3,18,47 (52.70)	7,40,87 (58.70)	9,25,27 (41.99)	16,76,34 (26.92)
2.	Debt services.	28 (0.17)	15,28 (2.53)	20,68 (1.64)	24,72 (1.12)	4,92,22 (7.90)
3.	Administrative services.	1,48 (0.88)	5,90 (0.98)	22,72 (1.80)	1,22,60 (5.56)	34,20 (0.55)
4.	Social and developmental services.	2,70 (1.60)	24,00 (33.97)	36,96 (2.93)	2,16,50 (9.83)	2,68,49 (4.31)
5.	Multipurpose river schemes, irrigation, electricity schemes.	2,68 (1.59)	(—) 6,34 (—) (1.05)	(—) 3,84 (—) (0.30)	3,00 (0.14)	2,59,40 (4.17)
6.	Public works (including roads) and schemes of miscellaneous public improvements.	1,50 (0.89)	12,45 (2.06)	68,75 (5.45)	29,70 (1.35)	47,71 (0.77)

7. Transport and communication (other than roads).	—	—	2,99 (0.23)	19,64 (0.89)	1,51,59 (2.43)
8. Miscellaneous.	5.41 (3.20)	30,32 (5.02)	1,27,21 (10.08)	3,19,09 (14.48)	6,49,21 (10.43)
9. Contribution and miscellaneous adjustments.	51,04 (30.22)	45,96 (7.60)	1,86,17 (14.75)	5,30,99 (24.10)	26,47,63 (42.52)
10. Extraordinary items.	—	1,58,28 (26.19)	59,57 (4.72)	11,97 (0.54)	—
Total Revenue receipts.	1,68,87 (100)	6,04,32 (100)	12,62,08 (100)	22,03,48 (100)	62,26,79 (100)

(Figures in brackets indicate the percentages)

TABLE 1 *(Contd.)*

Contribution of Major Revenue Earning Sources to the Orissa Budget

(Rs. in '000)

Sl. No.	Major Heads	1966-67 1st Annual Plan period	1967-68 2nd Annual Plan period	1968-69 3rd Annual Plan period	1969-70 1st year of the 4th plan period	1970-71
		8	9	10	11	12
1.	Taxes, duties and other principal heads of revenue.	26,00,97 (24.35)	30,19,67 (27.70)	32,85,82 (28.18)	39,53,25 (30.15)	46,67,79 (34.37)
2.	Debt services.	9,92,83 (9.30)	11,48,27 (10.35)	14,85,05 (12.73)	14,04,52 (10.71)	11,98,06 (8.82)
3.	Administrative services.	84,17 (0.79)	87,88 (0.81)	64,89 (0.56)	47,88 (0.36)	62,07 (0.46)
4.	Social and development.	5,27,29 (4.94)	3,85,25 (3.53)	4,01,39 (3.44)	5,21,34 (3.98)	5,38,88 (3.97)
5.	Multipurpose river schemes, irrigation, electricity schemes.	2,66,75 (2.50)	2,07,82 (1.91)	1,53,20 (1.31)	4,92,79 (3.76)	16,24,1 (1.19)
6.	Public works (including roads) and schemes of miscellaneous public Improvements.	67,04 (0.63)	60.39 (0.55)	64,32 (0.55)	87,50 (0.67)	98,12 (0.72)

7. Transport and communication (other than roads).	2,21,87 (20.08)	2,38,74 (2.19)	2,92,07 (2.50)	2,88,29 (2.19)	32,00,4 (2,36)
8. Miscellaneous.	5,75,32 (5.39)	5,90,41 (5.42)	6,61,95 (5.68)	7,98,15 (6.09)	92,43,6 (6.81)
9. Contribution and misc. adjustments.	53,42,88 (50.02)	51,64,45 (47.36)	52,52,90 (45.05)	55,18,84 (42.09)	56,08,12 (41.30)
10. Extra-ordinary items.	38	4	3	—	—
Total revenue receipts.	1,06,79,60 (100)	1,09,02,92 (100)	1,16,61,62 (100)	13,11,23,56 (100)	1,35,79,85 (100)

(Figures in brackets indicate the percentages).
Source : Orissa State Budgets.

TABLE 2

Major Head—Taxes, Duties and other Principal Heads of Revenue (Rs. in '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Taxes on income other than Corporation Tax.	57 (0.55)	8922 (28.02)	21401 (28.89)	27609 (29.85)	33839 (20.19)
2.	Estate Duty.	—	—	—	662 (0.71)	1482 (0.88)
3.	Land Revenue.	5026 (48.43)	5004 (15.71)	11379 (15.36)	19914 (21.53)	27862 (16.62)
4.	State Excise Duties	3278 (31.59)	13535 (42.50)	18062 (24.38)	10163 (10.98)	18091 (10.79)
5.	Taxes on vehicles.	69 (0.66)	247 (0.78)	1007 (1.36)	6564 (7.09)	12897 (7.69)
6.	Sales Tax.	—	—	—	—	55017 (32.82)
7.	Other taxes and Duties.	2 (0.02)	828 (2.60)	13400 (18.08)	20858 (22.54)	7452 (4.45)
8.	Stamps.	1732 (16.69)	2804 (8.80)	7626 (10.29)	5342 (5.77)	8228 (4.91)
9.	Registration fees.	214 (2.06)	507 (1.59)	1212 (1.64)	1415 (1.53)	2766 (1.65)
	Total :	10378 (100)	31847 (100)	74087 (100)	92527 (100)	167634 (100)

(Figures in brackets indicate percentages).

TABLE 2 (*Contd.*)

Major Head—Taxes, Duties and other Principal Heads of Revenue (Rs. in '000)

Sl. No.	Sub-heads	1966-67	1967-68	1068-69	1969-70	1970-71
		8	9	10	11	12
1.	Taxes on income other than Corporation Tax.	47399 (18.23)	60015 (19.88)	67010 (20.39)	109306 (27.55)	133057 (28.51)
2.	Estate Duty.	1553 (0.60)	75 (0.02)	1683 (0.51)	2587 (0.65)	1809 (0.39)
3.	Land Revenue.	25135 (9.66)	16112 (5.34)	15777 (4.80)	17262 (4:37)	16683 (3.57)
4.	State Excise duties.	24497 (9.42)	28712 (9.51)	41586 (12.66)	42161 (10.66)	42469 (9,10)
5.	Taxes on vehicles.	18731 (7.20)	21734 (7.20)	25860 (7.87)	25988 (6.57)	29335 (6.28)
6.	Sales Tax.	109693 (42.17)	125640 (41.61)	130638 (39.76)	144997 (36.68)	175406 (37.58)
7.	Other taxes and duties.	16137 (6.20)	29147 (9.65)	24690 (7.52)	29334 (7.43)	41455 (8.88)
8.	Stamps.	13055 (5.02)	15837 (5.24)	16305 (4.96)	18203 (4.60)	20996 (4.50)
9.	Registration fees.'	3897 (1.50)	4695 (1.55)	5033 (1.53)	5487 (1.39)	5569 (1.19)
	Total :	260097 (1.00)	301967 (1.00)	328582 (1.00)	395325 (1.00)	466779 (100)

(Figures in brackets indicate percentages).
Source : Orissa State Budgets.

TABLE 3

Major Head—Contribution and Miscellaneous Adjustments (Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	State share of Union Excise Duties.	104 (2.04)	595 (12.95)	7412 (39.83)	15927 (29.99)	69348 (26.19)
2.	Grants-in-aid from Central Govt.	—	4000 (87.05)	11200 (60.17)	36312 (68.39)	195231 (73.74)
3.*	Miscellaneous adjustments between Central and State/Union terrtiory Govt.	50,00 (97.96)	1	5	4	19 (0.01)
4,	Dividends, etc. from commercial and other undertakings.	—	—	—	—	162 (0.06)
5.	Other misc. contribution and assignments.	—	—	—	—	3
6.	Taxes on Railway fares.	—	—	—	856 (1.62)	—
	Total :	5104 (100)	4596 (100)	18617 (100)	53099 (100)	264763 (100)

* Contribution from the Central Government on account of administration of the Explosive Acts. Indian Arms Acts, Rice Milling Industries (Regulation act), Carbide of Calcium Rules, Cinema-Utograph Film Rules and Petroleum Acts. (Figures in brackets indicate percentage).

TABLE 3 (*Contd.*)

Sl. No.	Sub-heads	1966-67	1967-68	1998-69	1969-70	1970-71
		8	9	10	11	12
1.	State Share of Union Excise duties.	102280 (19.14)	105648 (20.46)	131788 (25.09)	141210 (25.59)	170498 (30.40)
2.	Grants-in-aid from Central Government.	431064 (80.68)	410138 (79.42)	392116 (74.65)	409223 (74.15)	389253 (69.41)
3.	Miscellaneous adjustments between Central & State/Union territory Governments.	36	38	56 (0.01)	20	37
4.	Dividends etc. from commercial and other undertakings.	918 (0.18)	621 (0.12)	1330 (0.25)	1431 (0.26)	1024 (0.18)
5.	Other misc. contributions and assignments.	—	—	—	—	—
6.	Taxes on Railway fares.	—	—	—	—	—
	Total :	534298 (100)	516445 (100)	525290 (100)	551884 (100)	560812 (100)

(Figures in brackets indicate percentages)

Source : Orissa State Budgets.

TABLE 4

Major Head—Miscellaneous (Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Transfer from famine relief fund	—	—	—	—	16377 (25.23)
2.	Contribution and recoveries towards pension and other retirement benefits	12 (2.22)	24 (0.79)	108 (0.85)	143 (0.45)	541 (0.83)
3.	Stationery and printing	28 (5.18)	90 (2.97)	174 (1.37)	249 (0.78)	556 (0.86)
4.	Forest	428 (79.11)	2189 (72.20)	8878 (69.79)	25798 (80.85)	42387 (65.29)
5.	*Miscellaneous	73 (13.49)	480 (15.83)	3561 (27.99)	5719 (17.92)	5060 (7.79)
6.	Civil Defence	—	249 (8.21)	—	—	—
	Total :	541 (100)	3032 (100)	12721 (100)	31909 (100)	64 921 (100)

* Miscellaneous includes:-

i. Unclaimed deposits.
ii. Fees for Govt. Audit:
iii. Rent, Rates andTaxes.
iv. Fires and forfeitures.
v. Receipts in connection with electricity.
vi. Receipts from State Lotteries, etc.

(Figures in brackets indicate percentages).

TABLE 4 (*Contd.*)

Sl. No. Sub-heads	1966-67	1967-68	1968-69	1969-70	1970-71
	8	9	10	11	12
1. Transfer from famine relief fund	—	—	—	—	—
2. Contribution and recoveries towards pension and other retirement benefits	1026 (1.78)	1416 (2.40)	1163 (1.76)	1044 (1.31)	1554 (1.68)
3. Stationery and printing	4422 (7.69)	3689 (6.25)	2817 (4.26)	4705 (5.89)	5333 (5.77)
4. Forest	45925 (79.83)	47899 (81.13)	56405 (85.21)	65802 (82.44)	73826 (79.87)
5.*Miscellaneous	6159 (10.70)	6037 (10.22)	5810 (8.77)	8264 (10.36)	11723 (12.63)
6. Civil defence	—	—	—	—	
Total :	57532 (100)	59041 (100)	66195 (100)	79815 (100)	92436 (100)

(Figures in brackets indicate percentages)

Source : Orissa State Budgets

TABLE 5

Major Head—Administrative Services (Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Administration of justice.	79 (53.38)	377 (63.90)	642 (28.26)	567 (4.62)	1179 (34.47)
2.	Jails	24 (16.22)	77 (13.05)	99 (4.36)	149 (1.22)	145 (4.24)
3.	Police	43 (29.05)	130 (22.03)	232 (10.21)	166 (1.35)	1622 (42.43)
4.	Supplies and Disposals	—	—	—	—	—
5.	*Miscellaneous Departments.	2 (1.35)	6 (1.02)	1299 (57.17)	11378 (92.81)	474 (13.86)
	Total	148 (100)	590 (100)	2272 (100)	12260 (100)	3420 (100)

* Examination fees; administration of Indian partnership Act, 1932; Fire Service and Miscellaneous fees from Administration of Hindu Religious Endowments; Registration of Societies, etc.

(Figures in brackets indicate percentages).

TABLE 5 (*Contd.*)

Sl. No.	Sub-heads	1966-67	1967-68	1968-69	1969-70	1970-71
		8	9	10	11	12
1.	Administration justice	1363 (16.19)	1210 (13.77)	958 (14.76)	982 (20.51)	927 (14.93)
2.	Jails	187 (2.23)	223 (2.53)	172 (2.65)	145 (3.03)	141 (2.27)
3.	Police	6569 (78.04)	7112 (80.93)	5020 (77.36)	3158 (65.96)	4481 (72.20)
4.	Supplies and disposals	(0.40)	5 (0.06)	—	—	—
5.	Misc. Departments.	264 (3.14)	238 (2.71)	339 (5.23)	503 (10.50)	658 (10.60)
	Total	8417 (100)	8788 (100)	6489 (100)	4788 (100)	6207 (100)

(Figures in brackets indicate percentages)
Source : Orissa State Budgets.

TABLE 6

Major Head—Social and Developmental Services (Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Education	165 (61.11)	697 (29.04)	1437 (38.88)	4530 (20.92)	3474 (12.94)
2.	Medical	24 (8.88)	156 (6.50)	208 (5.63)	569 (2.63)	1378 (5.13)
3.	Public Health	16 (5.94)	13 (0.54)	95 (2.57)	14 (0.43)	296 (1.10)
4.	Agriculture	24 (8.88)	826 (34.42)	698 (18.88)	4122 (19.04)	2909 (10.83)
5.	Rural Development	—	—	—	—	181 (0.67)
6.	Animal Husbandry	19 (7.02)	93 (3.88)	264 (7.14)	1246 (5.76)	762 (2.84)
7.	Cooperation.	7 (2.59)	38 (1.58)	66 (1.97)	792 (3.66)	272 (1.02)
8.	Industries.	15 (5.58)	577 (24.04)	—	—	2054 (7.65)
9.	Community Dev. Projects, National Extension Service and Local Dev. Works.	—	—	—	7878 (36.39)	1100 (4.10)

10. *Miscellaneous, Social and Developmental organisations.	—	—	—	—	14423 (53.72)
11. Industries and supply.	—	—	928 (25.11)	2419 (11.17)	—
Total.	270 (100)	2400 (100)	3696 (100)	21650 (100)	26849 (100)

* i) Fees and receipts from Industrial Dispute Act, 1947
ii) Orissa Shops and Commercial Establishment Act, 1956.
iii) Registration of Trade Unions, Inspection of steam boilers, Factories Act (1948) and Sales of Stores and Materials, etc. Tribal Rural Welfare Schemes, Mining Department, Registration of Births, Deaths and Marriages, Employment Organisation and Central Leave and District Shelters, etc.

(Figures in brackets indicate percentages).

TABLE 6 *(Contd.)*

(Figures in '000 Rs.)

Sl. No. Sub-heads	1966-67	1967-68	1968-69	1969-70	1970-71
	8	9	10	11	12
1. Education.	6261 (11.87)	5638 (14.63)	5705 (14.21)	6810 (13.06)	7325 (13.59)
2. Medical	1835 (3.48)	1625 (4.22)	1428 (3.56)	3026 (5.80)	2313 (4.29)
3. Public Health.	1013 (1.92)	1951 (5.06)	1864 (4.64)	5591 (10.72)	3000 (5.57)
4. Agriculture	14273 (27.07)	1250 (3.25)	6316 (1.74)	6786 (13.02)	7985 (14.82)
5. Rural Development	532 (1.01)	394 (1.02)	718 (1.79)	603 (1.16)	733 (1.36)
6. Animal Husbandry	4804 (9.11)	3655 (9.49)	3037 (7.57)	4079 (7.83)	4499 (8.35)
7. Cooperation.	305 (0.58)	491 (1.28)	592 (1.47)	1293 (2.48)	1613 (2.99)
8. Industries	1484 (2.81)	1866 (4.84)	1582 (3.94)	1542 (2.96)	1609 (2.99)
9. Community Dev. Projects, National Extension Service and local development works.	1980 (3.76)	913 (2.37)	1017 (2.53)	1059 (2.03)	1108 (2.06)

10. * Miscellaneous, Social and Developmental Organisations.	20242 (38.39)	20742 (53.84)	17880 (44.55)	21345 (40.94)	23703 (43.98)
11. Industries and Supplies.	—	—	—	—	—
Total	52729 (100)	38525 (100)	40139 (100)	52134 (100)	53888 (100)

(Figures in brackets indicate percentage)

Source : Orissa State Budgets.

TABLE 7

Major Head—Multipurpose River schemes, Irrigation and Electricity schemes

(Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Irrigation, Navigation Embankment and drainage works for which capital accounts are kept.	257 (95.90)	(—) 799	(—) 148	(—) 1230 (—) (410.00)	1711 (6.60)
2.	Irrigation, Navigation Embankment and drainage works for which no capital account are kept.	11 (4.10)	159	194	214 (71.33)	492 (1.90)
3.	Receipts from electricity schemes.	—	6	(—) 430	1316 (438.67)	6520 (25.13)
4.	Multipurpose River schemes.	—	—	—	—	17217 (66.37)
	Total :	268 (100)	(—) 634	(—) 384	300 (100)	25940 (100)

(Figures in brackets indicate percentage)

TABLE 7 (*Contd.*)

(Figures in Rs. '000)

Sl. No.	Sub-heads	1966-67	1967-68	1968-69	1969-70	1970-71
		8	9	10	11	12
1.	Irrigation, Navigation Embankment and drainage works for which capital accounts are kept.	2522 (9.45)	2595 (12.49)	6157 (40.19)	6520 (12.88)	3881 (23.90)
2.	Irrigation, Navigation Embankment and drainage works for which no capital accounts are kept.	202 (0.76)	348 (1.67)	312 (2.04)	556 (1.13)	630 (3.88)
3.	Receipts from electricity scheme	8409 (31.52)	4826 (23.22)	5332 (34.80)	23421 (47.72)	9425 (58.03)
4.	Multipurpose River Scheme.	15542 (58.27)	13013 (62.62)	3519 (22.97)	18782 (38.27)	2305 (14.19)
	Total :	26675 (100)	20782 (100)	15320 (100)	49079 (100)	16241 (100)

(Figures in brackets indicate percentage)

Source : Orissa State Budgets.

TABLE 8

Major Head-Transport and Communication
(Other than Roads)

(Figures in Rs. '000)

Sl. No.	Sub-heads	1936-37	1947-48	1952-53	1957-58	1962-63
1	2	3	4	5	6	7
1.	Ports and Pilotage	—	—	—	—	26
2.	Road and Water Transport schemes	—	—	299 (100)	1964 (100)	15133 (99.83)
3.	Aviation	—	—	—	—	—
	Total	—	—	299 (100)	1964 (100)	15159 (100)

(Figures in brackets indicate percentage).

TABLE 8 (*Contd.*)

Sl. No.	Sub-heads	1966-67	1967-68	1968-69	1969-70	1970-71
		8	9	10	11	12
1.	Ports and Pilotage	5	9	19	8	54 (0.17)
2.	Roads water transport schemes	22182 (99.98)	23865 (99.95)	29188 (99.93)	28821 (99.97)	31950 99.83)
3.	Aviation	—	—	—	—	—
	Total	22187 (100)	23874 (100)	29207 (100)	28829 (100)	32004 (100)

(Figures in brackets indicate percentage).

Source : Orissa State Budgets

APPENDIX—I

Total Revenue Receipts of the State (Figures in Rs. '000)

Item Year	Direct Tax	Indirect Tax	Tax Revenue (Col. 2+3)	Non-Tax Revenue	Total Revenue (Col. 4+5)
1	2	3	4	5	6
1936-37	7098 (42.03)	3384 (20.04)	10482 (62.07)	6405 (37.93)	16887 (100)
1947-48	17484 (28.93)	14958 (24.75)	32442 (53.68)	27990 (46.32)	60432 (100)
1952-53	42625 (33.77)	38874 (30.81)	81499 (64.58)	44709 (35.42)	126208 (100)
1957-58	62362 (28.30)	46948 (21.31)	109310 (49.61)	111038 (50.39)	220348 (100)
1962-63	87074 (13.98)	149908 (24.08)	236982 (38.06)	385697 (61.94)	622679 (100)
1966-67	109770 (10.28)	252607 (23.65)	362377 (33.93)	705583 (66.07)	1067960 (100)
1967-68	118468 (10.87)	289147 (26.52)	407615 (37.39)	682677 (62.61)	1090292 (100)
1968-69	131668 (11.29)	328702 (28.19)	460370 (39.48)	705792 (60.52)	1166162 (100)
1969-70	178833 (13.64)	357702 (27.28)	536535 (40.92)	774721 (59.08)	1311256 (100)
1970-71	207449 (15.28)	429828 (31.65)	637277 (46.93)	720708 (53.07)	1357985 (100)

(Figures in brackets indicate percentage).
Source : Orissa State Budgets

APPENDIX—A

Direct Taxes

(Figures in '000 Rs.)

Item Year	Tax on income other than corporation	Exstate duty	Land Revenue	Tax on Vehicles	Stamps	Registration fees	Taxes on Railway fares	Total	Tax Revenue (Direct + Indirect)
1	2	3	4	5	6	7	8	9	10
1936-37	57 (0.54)	—	5026 (47.95)	69 (0.66)	1732 (16.53)	214 (2.04)	—	7098 (67.72)	10482 (100)
1647-48	8922 (27.50)	—	5004 (15.43)	247 (0.71)	2804 (8.65)	507 (1.56)	—	17484 (53.90)	32442 (100)
1952-53	21401 (26.26)	—	11379 (13.96)	1007 (1.23)	7626 (9.36)	1212 (1.49)	—	42625 (52.30)	81499 (100)
1957-58	27609 (25.26)	662 (0.60)	19914 (18.22)	6564 (6.01)	5342 (4.89)	1415 (1.29)	856 (0.78)	62362 (57.05)	109310 (100)
1962-63	33839 (14.28)	1482 (0.63)	27862 (11.76)	12897 (5.44)	8228 (3.47)	2766 (1.17)	—	87074 (36.75)	236982 (100)
1966-67	47399 (13.08)	1553 (0.43)	25135 (6.94)	18731 (5.17)	13055 (3.60)	3897 (1.08)	—	109770 (30.30)	362377 (100)
1967-68	60015 (14.72)	75 (0.02)	16112 (3.95)	21734 (5.33)	15837 (3.89)	4695 (1.16)	—	118468 (29.07)	407615 (100)

1968-69	67010 (14.56)	-1683 (0.37)	15777 (3.42)	25860 (5.62)	16305 (3.54)	5033 (1.09)		131668 (28.60)	460370 (100)
1969-70	109306 (20.37)	2587 (0.48)	17262 (3.22)	25988 (4.84)	18203 (3.39)	5487 (1.03)	—	178833 (33.33)	536535 (100)
1970-71	133057 (20.88)	1809 (0.28)	16683 (2.63)	29335 (4.60)	20996 (3.29)	5569 (0.87)	— —	207449 (32.55)	637277 (100)

Source : Orissa State Budgets.
(Figures in brackets indicate percentages).

APPENDIX—I-B

Indirect Tax
(Figures in '000 Rs.)

Item Year.	State Excise duties	Sales Tax	Other Taxes and duties	State's share of Union Excise duties.	Total	Tax Revenue
1	2	3	4	5	6	7
1936-37	3278 (31.27)	—	2 (0.02)	104 (0.99)	3384 (32.28)	10482 (100)
1947-48	13535 (41.72)	—	828 (2.55)	595 (1.83)	14958 (46.10)	32442 (100)
1952-53	18062 (22.17)	—	13400 (16.44)	7412 (9.09)	38874 (47.70)	81499 (100)
1957-58	10163 (9.30)	—	20858 (19.08)	15927 (14.57)	46948 (42.95)	109310 (100)
1962-63	18091 (7.63)	55017 (23.22)	7452 (3.14)	69348 (29.26)	149908 (63.25)	236982 (100)
1966-67	24497 (6.76)	109693 (30.27)	16137 (4.45)	102280 (28.22)	252607 (69.70)	362377 (100)
1967-68	28712 (7.04)	125640 (30.82)	29147 (7.15)	105648 (25.92)	289147 (70.93)	407615 (100)

1968-69	41586 (9.03)	130638 (28.38)	24690 (5.36)	131788 (28.63)	328702 (71.40)	460370 (100)
1969-70	42161 (7.86)	144997 (27.02)	29334 (5.47)	141210 (26.32)	357702 (66.67)	536535 (100)
1970-71	42469 (6.66)	175406 (27.52)	41455 (6.51)	170498 (26.76)	429828 (67.45)	637277 (100)

Source : Orissa State Budgets.
(Figures in brackets indicate percentages).

APPENDIX—I-C

Non-tax Revenue

(Figures in '000 Rs.)

Item Year	Debt services	Administrative Services.	Social and Developmental Services	Multipurpose River Schemes Irrigation and Electricity Schemes.	Public works (including roads) and Schemes of Miscellaneous public improvements.	Transport & Communication (other than roads)
1	2	3	4	5	6	7
1936-37	28 (0.44)	148 (2.31)	270 (4.22)	268 (4.18)	150 (2.34)	—
1947-48	1528 (5.46)	590 (2.11)	2400 (8.57)	(—) 634 (—) (2.27)	1245 (4.45)	—
1952-53	2068 (4.63)	2272 (5.08)	3696 (8.27)	(—) 384 (—) (0.86)	6875 (15.38)	299 (0.68)
1957-58	2472 (2.23)	12260 (11.04)	21650 (19.50)	300 (0.27)	2970 (2.67)	1964 (1.77)
1962-63	49222 (12.76)	3420 (0.89)	26849 (6.96)	25940 (6.73)	4771 (1.24)	15159 (3.93)
1966-67	99283 (14.07)	8417 (1.19)	52729 (7.48)	26675 (3.78)	6704 (0.95)	22187 (3.14)
1967-68	114827 (16.82)	8788 (1.29)	38525 (5.64)	20782 (3.04)	6039 (0.88)	23874 (3.50)

1968-69	148505 (21.04)	6489 (0.92)	40139 (5.69)	15320 (2.17)	6432 (0.91)	29207 (4.14)
1969-70	140452 (18.13)	4788 (0.62)	52134 (6.73)	49279 (6.36)	8750 (1.13)	28829 (3.72)
1970-71	119806 (16.62)	6207 (0.86)	53888 (7.48)	16241 (2.25)	9812 (1.36)	32004 (4.44)

APPENDIX—I-C

Non-tax revenue (*Contd.*)

(Figures in '000 Rs.)

Item Year	Miscella-neous	Grants-in-aid from Central Govern-ment	Miscella-neous Adjust-ments between Central and State Union Territory Govern-ment	Dividends etc. from Commer-cial and other under-takings	Other Misce-llaneous contribu-tions and assign-ments	Extra-ordinary items	Total Non-tax revenue
	8	9	10	11	12	13	14
1936-37	541 (8.45)	—	5000 (78.06)	—	—	—	6405 (100)
1947-48	3032 (10.83)	4000 (14.29)	1	—	—	15828 (56.56)	27990 (100)
1852-53	12721 (28.45)	11200 (25.05)	5	—	—	5957 (13.32)	44709 (100)
1957-58	31909 (28.74)	36312 (32.70)	4	—	—	1197 (1.08)	111038 (100)
1962-63	64921 (16.83)	195231 (50.62)	19	162 (0.04)	3	—	385697 385697
1966-67	57532 (8.16)	431064 (61.09)	36	918 (0.14)	—	38	705583 (100)

1967-68	59041 (8.65)	410138 (60.08)	38	621 (0.10)	—	4	682677 (100)
1968-69	66195 (9.38)	392116 (55.56)	56	1330 (0.19)	—	3	705792 (100)
1969-70	79815 (10.30)	409223 (52.82)	20	1431 (0.19)	—	—	774721 (100)
1970-71	92436 (12.83)	389253 (54.01)	37	1024 (0.15)	—	—	720708 (100)

Source : Orissa State Budgets.
(Figures in brackets indicate percentages).

The Role of Specialists in Economic Planning

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India is now firmly committed to certain basic socio-economic goals, the most important of which, as outlined in the Approach to the Fifth Five Year Plan, are the twin objectives of removal of poverty and attainment of self-reliance.

2. With the emergence of well defined economic goals as the basic State policies, spelt out in clearer terms, the ambivalence of the past about the relative importance of different instruments as means for attaining the desired ends is rapidly disappearing. It is now recognised that State has to assume the role of commanding height of the economy for achieving these objectives.

3. Assuming that for realisation of these economic goals necessary restructuring of the Planning apparatus is attempted, the pertinent question that would arise is what should be the role of the specialists in such a reorganised pattern. The dramatic transformation of the functions of the State, from the mere law and order apparatus or at best a tax collection machinery, to the present form of economic and social planning has introduced a qualitative change in the character of its functions. Thus when the substance of State functions has changed, the question is asked what about the form ? In this context, in the present-day India, passionate controversies have been raised over the issue of the relative role of specialists versus generalists. It is often argued that the need of the day is to bring to bear the impact of the expertise provided by the specialists in the decision making process. This is also said that with the disappearance of the colonial administration and emergence of the State as the main economic functionary, the generalist dominated system has become unsuitable as an instrument for delivering the goods. There is sufficient force in the contention that economic planning is different from general administration. In the case of the

former, the laws of economic growth, the problems of the technical coefficients of capital and labour, the input-output ratios and a host of other parameters with their interrelationships are to be competently handled, which only the specialists who have developed the necessary expertise can provide. On the other hand, it is said that the generalists are essentially amateurists, moving in rapid succession from one field to another and in the process are unable to acquire necessary expertise. His versatility tantamounts to what is more respectfully described as 'inter-changeability'.*

4. Secondly, it is also said that approach to economic planning needs to be dynamic, whereas a generalist is basically interested in the maintenance of status-quo. This conflict between statics and dynamics, between continuity and change, has not only remained confined into the sphere of academic controversies but has posed the real problem of choice before the policy makers. Nevertheless, Government of to-day is drawing into its fold engineers doctors, statisticians, economists and so on, in numbers that had never happend before and as a result, we have a new type of talents, with new types of skills and a very different way of thinking, entering into the arena, traditionally dominated by generalists. In such an emerging situation, where do the specialists stand, to what extent they can play their role in ultimate decision making, are the questions, which many persons feel have remained unanswered till now.

5. Conceding that specialists should have their rightful place in giving a scientific basis to planning, whether they be 'on tap' or 'on top' will depend on how do we define the term planning.

6. Usually the term 'Plan' evokes four associated ideas namely, *(i)* setting up of goals desired to be attained, *(ii)* provision and pre-arrangement, *(iii)* taking proper account of the inter-connections and mutual repercussions of different elements of a composite body of actions, and (*iv*) a notion of optimisation or obtaining the best possible results with a given effort. Economic Planning in its broadest possible sense may be taken to mean any scheme of coordinated action to be undertaken by a Public Authority with a view to bringing about certain desired changes in a given economy.

Civil Service looks at itself; the Economist, London.

The scheme is to be drawn up sufficiently ahead of the time during which the actions are to be undertaken. It has to be drawn up in such a manner as to take account of inter-dependence of the various parts of the economy and the inter-connections between different movements in it. The scheme must also be such as to achieve the goal in an optimum fashion.

7. A scheme of coordinated action, drawn up ahead of time, with a view to bringing about certain desired changes in the economy with an optimum choice of means has, of necessity, to be of a statistical work. For this purpose, sometimes, a Plan is defined as "an optimally balanced collection of statistical measure standing for a certain number of objectives and a large number of means of action proposed to be taken to attain these objectives."

8. Balance as used in the above definition implies that statistical measures set in a plan for different economic preferences are such that they can be realised simultaneously. In other words, they are not such that the realisation of one renders impossible the realisation of one or more of the rest. The notion of balance can be differentiated as between macro-economic balance and inter-sectoral balance. Macro-economic balance refers to the consistency between such overall economic variables, as income, employment, investment, savings and the changes in them. Sectoral balance ensures that the demand and supply conditions of the different sectors are such that all the supplies cancel out all the demands, there being no excess or short supply of anything. Sectoral balance may relate to sectoral activities at the same point of time or points of time with certain time lags. In the later situation the balance is called inter-temporal in addition to being called inter-sectoral. Regional disparities lead to special considerations coming under what are called Spetial balances.

9. The Statistical measures constituting a plan are not only to be a balanced combination but to be an optimal combination as well.

10. The balance conditions impose certain restrictions on the values of the measures that are taken into account in a Plan. These conditions may enter into the planning exercise as a certain number of inequalities or equations. There will be either

as many equations as the number of variables or fewer so that in general there will be some degree of freedom. This will mean that there may be a very large number of combinations of the measures all satisfying equally well the balance conditions. In such a situation a choice of combination arises and this leads to the question which particular combination to choose. Here we introduce what is known as the conditions of optimality. That combination which maximises the benefits is usually chosen as the desired set of measures.

11. In any planning model, the above balancing, optimality and measurements of results will have to become the essential features. If so, the role of specialists in general and of economists and statisticians in particular assume crucial significance. Decisions on any important aspect of planning, say, plan formulation, or target fixation or investment redirection, or resource allocation, or result evaluation or any other cognet function has almost become inconceivable without continuous guidance from economists and statisticians. Their role is not only confined in furnishing data or posing problems, but in supplying the needed skills for analysing, projecting, interpreting and drawing inferences by critical application of scientific tools of economic planning.

12. Policy decisions will go blind without them. Adhocism or precedent-based decisions cannot be substitutes of scientific planning. It is because of this realisation, economists and statisticians are being assigned roles of increasing importance. Beginning from the Panel of Economists constituted during the Second Plan to the latest device of strengthening the planning machinery for the Fifth Plan, the approach and emphasis have remarkably shifted in favour of an increasingly important role for the statisticians, economists and other specialists. The services of the statisticians in discovering that the assumed growth rate of population at 1.5% per annum in the second plan was much below the 2% growth rate actually taking place, which was later on confirmed in the next decennial census of 1961, were of immense value for planners. Similarly, in determining the policy for sanctioning of major irrigation Projects, the specialist appraisal leading to the conclusion that instead of financial returns, benefit-cost ratio should be the criterion, led to the fixation of 1.5:1 as benefit-cost ratio as the guideline for planners. Services of this nature have become an integral part of scientific planning in modern times. Thus in conclusion, one can

confidently say that the role of economists and statisticians or for that matter of any specialist need not conflict with the role of general administrators, but it should be viewed as complimentary function, which has greater fundamental value and utility in a scientific approach to planning. This is already true in case of developed economies and the sooner it is recognised, accepted and implemented in underdeveloped economies, the quicker will become the pace of progress in attaining the desired objectives of our economic planning.

Land Reform and Agricultural Development

Dr. Baidyanath Misra

Land reform is not merely an economic issue so that the gain accruing from it can be measured in quantitative term. It is a process of social and institutional change which has important bearing on agricultural development. It is more a growth inducing process rather than an act of actual capital formation. Further, the overtone of social justice that is implicit in the land reform legislation in the shape of distribution of income and restriction on the use of land may create some resistance on the part of the well-to-do farmers and absentee landlords which may reduce investment potential in land development programme in the short run depending of course on the capacity of administration to withstand it. But the success of each development programme should not be measured in terms of its input-output ratio. The gestation period in case of some is greater than that of the other. Land reform measures may have a longer gestation period than investment made in irrigation (here also the gestation period is different in different types of irrigation), fertilizer, insecticides and such other inputs required to increase the productivity of land. But it determines the pattern of productive system which we are going to have in future. No society which aims at modernisation of the economy can neglect such long-term changes at the behest of immediate economic gain.

All the same, we propose to consider the economic aspects of land reform measures that directly help agricultural development. Land reform in the traditional and accepted sense of the term implies redistribution of property in land for the benefit of small farmers and agricultural workers. In the context of India, specific provision included in land reform measures are abolition of intermediaries, tenancy reform, fixation of ceiling on land, consolidation of holdings and co-operative management of

lands use. The only two problems which have created acute controversy in India is the tenancy reform and fixation of ceiling on land. The question we propose to discuss is to what extent these two measures are helpful in *(a)* increasing productivity of land, and *(b)* providing additional employment opportunities in the country. In other words, whether there is any conflict between social justice and economic growth or both can go together for achieving a healthy pattern of economic growth.

The abolition of intermediaries was given high priority in India immediately after independence and each State enacted legislation for the abolition of intermediary tenures on payment of compensation. By about 1954, necessary legislation was adopted in all the states. Except for a few minor intermediary tenures, the abolition of intermediary tenures is almost complete though it has imposed heavy administrative and financial burden on the state Governments. Compensation payable to ex-intermediaries has been computed at Rs. 600 crores out of which about Rs. 275 crores has been paid in cash and bonds. No quantitative estimate has been made regarding its impact on agricultural production. But the fact that as a result of the abolition of intermediary tenures, about 20 million tenants are estimated to have come into direct contact with the State, many of the motivational factors which were impending the increase in agricultural production have been removed. Further, abolition of intermediary tenures has eliminated many elements of exploitation and social injustice within the agrarian system and ensured equality of status and opportunity to many sections of the rural population. Besides, it has also vested in the state large areas of privately owned forest land, grazing land and culturable waste land which are being and can be effectively utilized by the state for proper land use.

Tenancy Legislation

By about mid-50's, tenancy legislation was given importance with a view to giving protection to the tenants and eventually conferring on them the ownership rights for the land they cultivated. The Planning Commission laid down three important guidelines for the reform of tenancy. Firstly, rent should not exceed one-fifth to one-sixth of the gross produce; secondly, the tenants should be accorded permanent rights in the land, they cultivate subject to a limited right of resumption to be granted to landowners; and thirdly, in respect of non-resumable land, landlord tenant relationship should

be ended by conferring ownership rights on tenants. Though most of the states enacted legislation on the guidelines suggested by the Planning Commission, the tenancy legislation fell far short of the accepted policy. To begin with, the rent fixed in the states like Punjab, Haryana, Jammu and Kashmir, Tamil Nadu and the Andhra area of Andhra Pradesh was more than what was recommended by the Five Year Plans. For example, in Punjab and Haryana, fair rent was 33-1/3 per cent of the gross produce, in Tamil Nadu 33-1/3 to 40 per cent of gross produce, and so on. Again, several states enacted legislation for conferring security of tenure on tenants. Under the existing law however, the position of tenants, and particularly share croppers, continues to be insecure in many states of India. The laws enacted by several states provided for the resumption within certain limits of tenanted lands by landowners for personal cultivation. The term 'Personal cultivation' was wide enough to cover all cases of cultivation under the landowner's supervision or the supervision of a member of his family. The provision for resumption of tenanted land by landowners resulted in the ejectment of many tenants. And in case of oral and informal leases, tenants could not claim tenancy rights and either there were voluntary surrenders or forceful ejections. Neither the enacted laws were satisfactory nor were the implementation of such laws effective. The Report of the Planning Commission's Task force on Agrarian Relations makes a categorical statement that the objective of ensuring fair rent and security of tenure still remains unattained in large parts of the country.

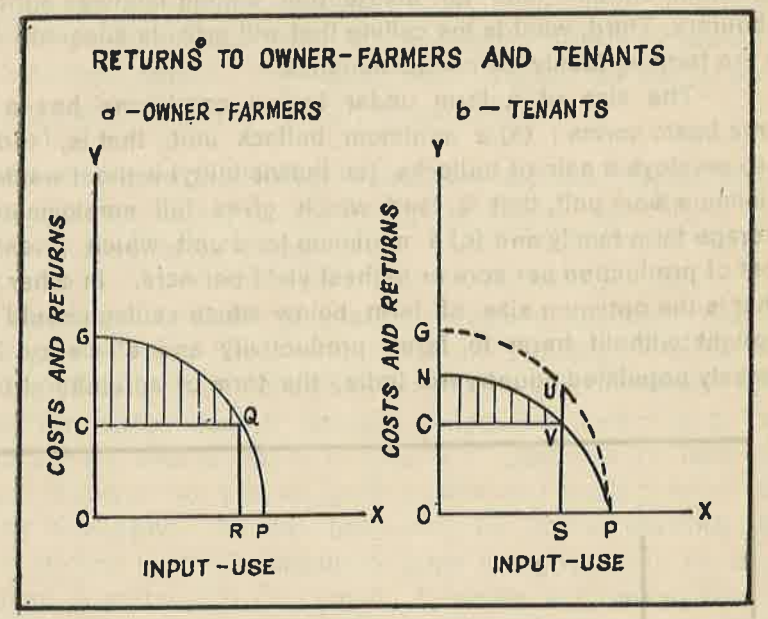
The area under open and concealed tenancy is estimated to be about one-third of the cultivated area. According to census of 1961, area under 'Pure' tenancy was 4.2 per cent and that under 'mixed' tanancy another 18.9 per cent of cultivated area, the two categories taken together making a total of 23.1 per cent. Besides, 10 per cent of the cultivated area is estimated to be under concealed tenancy.[1] It is not yet known whether the area under tenancy has come down in recent years. Whether it is one third or one-fourth of the total cultivated area, this is an inefficient method of farming and needs to be corrected in the interest of increasing production apart from securing social justice. The efficiency of owner cultivators as contrasted to tenants can be seen from the following diagram.

1. See A. M. Khusro, Economics of Land Reform and Farm Size In India, Macmillan. India, 1973, p. 26.

RETURNS TO OWNER-FARMERS AND TENANTS

a. Owner-farmer

b. Tenants



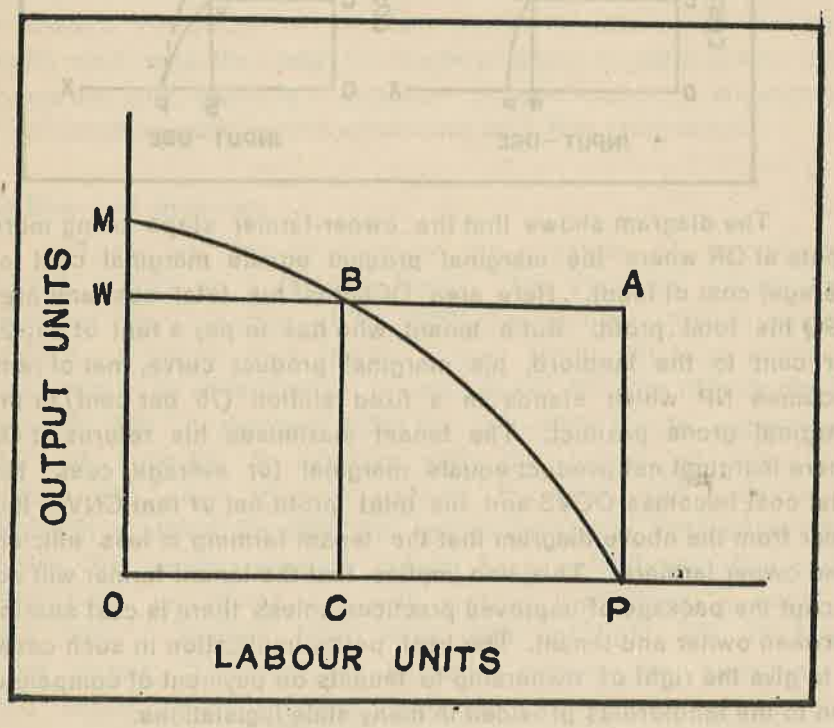
The diagram shows that the owner-farmer stops using more inputs at OR where the marginal product equals marginal cost (or average) cost of input. Here area OCQR is his total cost and area CGQ his total profit. But a tenant who has to pay a rent of say 25 per cent to the landlord, his marginal product curve, net of rent, becomes NP which stands in a fixed relation (75 per cent) to the marginal gross product. The tenant maximises his returns at OS where marginal net product equals marginal (or average) cost. His total cost becomes OCVS and his total profit net of rent CNV. It is clear from the above diagram that the tenant farming is less efficient than owner farmers. This also implies that the tenant farmer will not accept the package of improved practices unless there is cost sharing between owner and tenant. The best policy implication in such cases is to give the right of ownership to tenants on payment of compensation to the landlord as provided in many state legislations.

Fixation of Ceiling

Next we come to the question of ceiling in land which has created acute controversy in recent years. Assuming that ceiling is

necessary, we have to consider three things. First, what is the minimum size of holdings which is consistent with the productive efficiency of land. Second, what is the ceiling that will provide maximum surplus land for distribution among landless agricultural labourers. Third, what is the ceiling that will provide adequate income to the farming family for its maintenance.

The size of a farm under Indian conditions has to satisfy three basic norms : (a) a minimum bullock unit, that is, land which fully employs a pair of bullocks (an indivisibility) without waste, (b) a minimum work unit, that is, land which gives full employment to an average farm family and (c) a minimum land unit which gives lowest cost of production per acre or highest yield per acre. In other words, what is the optimum size of farm below which ceiling should not be brought without harm to farm productivity and efficiency ? In a densely populated country like India, the form of agricultural techno-



logy symbolised by the tractor or harvestor is not appropriate. Where threre is highest occupation ratios, profit maximisation principle cannot work, because that would increase unwanted leisure while diminishing the national product. The basic principle of an efficient

economy is that no factor should be paid more than its marginal productivity. But this law is valid in advanced countries. In an underdeveloped country, the economy does not operate efficiently unless some labourers earn more than their own contribution to output.[2] The following digram shows that the marginal productivity principle cannot maximise output. It follows from this that the size of farm problem is a problem of people, not of machines.[3]

If the marginal productivity principle is applied, only OC units of labour can be employed whereas in traditional agriculture OP units of labour are actually employed.

Again, land, which is a scarce factor assumes crucial importance as a major factor of production. Although mechanisation of large scale units can increase output per unit of labour, only in exceptional cases does it increase output per unit of land. The basic question in such a case is to secure a fuller use of land and increased demand for labour (both human and bullock which are abundant in supply). As has been said by Doreen Warriner, the theory of the firm is always difficult to apply in agriculture, as far as developing countries are concerned, it seems to have very limited application. The argument that the division of large agricultural enterprises will cause a decline in productivity is true on two assumptions : (i) that there is competition between the factors of production, and (ii) that there are economies of large scale production. These assumptions are generally valid in industrialised countries, and not in developing countries.[4]

As the experience of India shows, large estates are not large producing units. Land reform in such case implies only transfer of ownership from the landowner to the cultivator of the existing small holdings. The size of farm is not affected, for there are no large farms. Nor does capital play important part in Indian farming to increase the optimum scale of farming. Even in industrialised countries, there is difference between the scale of production in

2. N. Georgesen-Roegen, Economic theory and Agrarian Economics in Agriculture in Economic Development, ed. by Eicher & Witt. Mc. Graw-Hill Book Company, 1964.
3. Philip M. Raup, Land Reform and Agricultural Development in Agricultural Development and Economic Growth.
4. Doreen Warriner, Land Reform and Economic Development in Eicher and Witt, op. cit.

agriculture and industry. But they try to reduce the difference by making heavy investment in agriculture which the developing countries cannot afford to invest.

But this does not mean that we should follow conventional method of cultivation for increasing the employment of human or bullock labour. Modern technology has different facets and there are many which are divisible and can be applied in small units for increasing the productivity of land. In fact, the economic promise of land reform will be defeated unless it creates scope for innovation, invention, local adoption of new technology and the diffusion of knowledge. In Soviet Russia, where there were large scale units of farming, there was poor performance of research, development and technical change in agriculture due to excessive rigid method of management control. On the other hand, in Japan, where farming operations were organised in small scale, a number of technical changes were made by the farmers, which were outstanding in character and which helped to accelerate the process of agricultural development.

Taking these factors into account, we can determine the size on the basis of abovementioned three factors. Prof. Khusro on the basis of Farm Management data of 1950s has calculated that taking one kind of land with another, $7\frac{1}{2}$ acres of land provide full employment to a pair of bullocks and to an average farm family. Further, the same data also show that above the 5 acre size, there is nothing to choose between large farms and small farms in respect of cost efficiency and productivity, that Indian agriculture is typically a scene of constant .returns to scale and that ceilings are size neutral[5]. Therefore, ceiling on land may be fixed at any level beyond $7\frac{1}{2}$ acres depending upon other considerations which we will examine in a later section.

Ceiling and Surplus Land :

Ceiling in land is also proposed with a view to distributing some surplus land among agricultural labourers. In the context of Indian

5. See A. M. Khusro, op. cit. Dr. Khusro also indicates that 1960 data do not show any major structural changes in relative efficiency and productivity of farms so as to warrant different policy conclusions.

economy industrialisation cannot provide sufficient job opportunities to solve the problem of unemployment. The majority of the work force will have to seek employment in agriculture for a long time to come. If agrarian reform can somehow rehabilitate agricultural workers with some land, it will be a great benefit to them. In India, there is a great deal of land hunger. This arises due to three factors : (a) increasing population, (b) absolute shortage of land and (c) lack of non-agricultural employment. One of the reasons for ceiling is to redistribute land among landless labourers since it is not possible to shift them to other occupations. Further, there is extreme maldistribution of land in India, with nearly a quarter of the households owning no land at all, and another one-fifth owning less than one acre each. If there is an absolute limit to the amount of land which any individual may hold, land reform will to some extent satisfy land hunger, reduce inequalities in land-ownership and provide greater opportunities for self-employment.

However, it should be noted that ceiling in land cannot provide sufficient surplus land for redistribution, nor was this main cause of fixation of ceilings. It was stated in the First Plan that if it were the sole object of policy to reduce the holdings of the larger owners with a view to providing for the landless or for increasing the farms of those who have uneconomic fragments, the facts at present available suggest that these aims are not likely to be achieved in any substantial measure. The experience of the last two decades also shows that ceiling in land cannot provide sufficient surplus land for distribution. It is estimated that by the end of 1970, the 'declared surplus' was only 2·4 million acres and 'area distributed' just half of that or 0·3 of one per cent of the total cultivated land of India. The quality of land distributed is also not considered fit for distribution.

It is true that the level of ceiling fixed in different states and exemptions provided in their Acts were themselves a deterrent to the availability of surplus land. If the level of ceiling is reduced further as per the recommendations of the Central Land Reforms Committee, 1971[6] what is the scope of surplus land available for redistribution ?

6. The Central Land Reforms Committee has recommended at a lower range of land size, name'y 10 acres of best lands to 54 acres of worst lands. They have also proposed to fix ceiling on a family basis instead of an individual basis, with some provision for lifting up the ceiling with additions to family size. Exemptions provided earlier have also been sought to be done away with.

Raj Krishna notes that if ceilings are fixed at 30 acres, 14 per cent of the area owned (36·7 million acres) would be available as surplus. This would be 90 per cent of the area required to give every landless family a minimum basic holding, or 42 per cent of the area required to increase sub-basic holdings to basic holdings; or 29 per cent of the area required for both these purposes. The basic holding was assumed to be 2.5 acres for one state, five acres for seven states and ten acres for ten states. These figures would seem to reveal the prospects of satisfying the land hunger in India to be much brighter than they really are.[7]

The findings of Dandekar and Rath also show that if ceilings in each state range from 7·5 to 30 acres and 50 acres for Rajasthan, there will probably be a surplus area of 42 million acres.[8] B. S. Minhas also states that assuming certain levels for certain groups of farmers, the excess area available for distribution might reach the not inconsiderable total of 43 million acres[9]. If distributed the per capita ownership would go up to 0.54 acres only, this is not all that small, for the total per family would amount to about 3.5 acres.

What is the consequence of this redistribution of surplus land ? Two questions are raised in this regard. One, sufficient land is not available for redistribution. Second, if land is redistributed among the landless, it would increase the number of uneconomic, non-viable units. Dandekar and Rath therefore do not find any justification for fixation of ceiling. They point out that "the problem of poverty cannot be solved by redistribution of land to everyone who needs it". Having considered a ceiling model of their own making, in Kerala and Tamil Nadu, they point out that all rural households will have some to cultivate but 40-45 per cent will have just half an

7. These are estimates of Planning Commission for eighteen (pre-reorganisation) states excluding four big states and noted by Raj Krishna in his 'Some Aspects of Land Reform and Economic Development in India' quoted by Wolf Ladejinsky Land Ceilings and Land Reform, Economic and Political Weekly, A. M. 1972.
8. V. M. Dandekar and Nilakantha Rath, Poverty in India, Indian School of Political Economy, 1971 P. 81.
9. Rural Poverty, Land Redistribution and Development Strategy, Indian Economic Review, April, 1971.

acre each. If similar reduced ceilings are applied nationwide, the same proportion of cultivators in various states would have holdings from 0.5 to 2.5 acres, Rajasthan being the only exception with 5 acres, and much of it poor land.

The validity of the argument of Dandekar and Rath is not challenged. But it must be stated clearly that it has never been the intention of ceiling to satisfy every landless with sufficient land for making it operationally efficient. In fact, land ceiling is a part of overall approach of agrarian reform. However, as stated by Ladejiusky, in a country where land hunger is a by-word the line of demarcation between a viable and non-viable holding is thinner than it appears at first glance. For those who might get an acre or two of land it could spell the difference between abject poverty and something approaching subsistence. He therefore concludes by saying that this is the reason why the best of land reforms, however well implemented, does not offer a final solution to all of the landless. But it must be stressed that even a partial solution is of inestimable value to multitudes of underprivileged who must look for a living within the confines of the agricultural sector.[10] Minhas also states that radical land redistribution policy by itself will not make a big dent on the problem of rural poverty in the sense of a considerable reduction in the numbers below the poverty line. This despite the fact that the economic position of a large majority of them would be far better than their pre-land reform situation. The trouble is that the size of cake is small, and the claimants are far too many.

The conclusion we derive from this is that ceiling should be accepted as a comprehensive effort aiming at rehabilitation of the country's rural economy. In addition to redistribution of land, there should be a massive programme of land consolidation followed by rural public works and co-operativisation of small holdings. When ceiling is opposed on the ground that this will increase the number of small, uneconomic and inefficient holdings, there is something wrong in the analysis. Because most of the cultivated land in India is not in single blocks but in piaces scattered all over the lot. A tenant or a sharecropper receipient of surplus plot of land is likely to cultivate the same land rather than add another holding. The established pattern of cultivation undergoes little changes; the vital

10. Wolf Ladejiusky, Land Ceilings and Land Reform, Economic and Political Weekly, Annual Number, 1972.

change occurs only with the change in the title to land. The only effective argument against ceiling is that it will lead small holdings which are less productive than the larger ones. As we have already seen the gross output per acre is higher on the small farms and that productivity per acre decreases with the increase in size of holdings. However, a size below five acres is considered inefficient from the point of view of productivity. Land reform measures should therefore emphasise consolidation of holdings and co-operativisation of small cultivators. Since one and two acres are wasteful of bullocks and other indivisibilities, co-operatives of small and marginal farms will be organised to increase the productivity of land. In fact, land reform will enable small farmers to organise on co-operative lines uninhabited by large and unequal elements which have prevented the successful working of co-operatives in India. In addition, if rural works and rural industries are established, they will supplement employment opportunities in rural areas, relieve pressure of working population in agriculture, provide additional income to the rural sector and pave the way for modernisation of agriculture. This shows that land reform is a condition of development; development will depend on other factors associated with this programme.

Ceiling and Incomes

Then we have to consider the question of income that should accrue to a farming family. The Planning Commission estimates that if a sum of Rs. 1200/- per annum (1960-61 prices) could be provided to a family, a farm family can meet minimum requirements of consumption. In other words, the size of farm should be such that it employs fully the indivisible inputs, especially a pair of bullocks, it employs fully the labour of farm fully without the need to work outside the farm and provides a minimum income of Rs. 1200/-per annum per family. Prof. Khusro has shown that Indian research results have established that under present-day conditions and with present techniques, a farm of less than 5 average (dry) acres does not fulfil any of these three norms. Therefore, as indicated already, the objective of land policy should be such that the floor should not be less than 5 acres for the landless and the marginal farmers. However, the concept of a floor to land holdings derives its imperativeness from the supreme need of operational efficiency rather than from the need to secure minimum income.

But those who live on land, the land policy should provide sufficient land to them so that they can meet their requirements of consumption including cost on education, health, housing sanitation, etc. that are required to maintain a minimum civilized life. This does not of course imply that agricultural families should not be allowed to supplement their income by non-agricultural occupations. Nor does this imply that agricultural income will remain static for all time to come. With improved technology and intensification of agricultural production, a farm family can earn more income than what is prescribed by land ceilings. All the same, if land alone is to provide income for a decent living for a farm family, a farm family should get about Rs. 4800/- or Rs. 5000/- per annum to meet the expenditures on all the items of minimum civilized consumption. If ceilings were to be imposed on consumption at three times the minimum civilized level, a consumption per family per annum of Rs. 15000/- could be regarded as reasonable in 1970 price level.[11]

Now the question arises, what should be the ceiling in land in order to generate an income of Rs. 15000/- per year ? In the context of present technology, the net return of an acre of double cropped, perennially irrigated variety of land could easily yield about Rs. 1500/- per year. If ceilings were fixed at 10 acres, the annual net income per family would come Rs. 15000/-. On the other hand, if some of the worst lands with no irrigation sources, but depending on rain water and yielding a single crop provide an income of about Rs. 350/- ceiling can be fixed at about 45 acres. However, what is more important for a farm family is not net income, but farm business income which includes rental value of owned land, interest on owned capital and inputed value of family labour. Though the difference between net income and farm business income will depend upon size of holdings, it can easily be inferred that on an average farm business income will be more than double of net income and in large farms, it will be about one and half times of net income. This shows that if a ceiling of 10 standard acres is imposed for a family of five, the concerned family can have a decent standard of living without even depending on any other occupation.

11. A. M. Khusro, op. cit,

Credit Needs of Small Farmers and Its Impact on Farm Earning and Employment in Orissa

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New agricultural technology is distinguished by its dependence on off-farm inputs like fertilizers, pesticides, power and machineries. Since the availability of capital to meet the requirements of the off-farm inputs at farm level is extremely limited, farm credit could become instrumental for agricultural development. Economics of farm financing has therefore become an interesting area of study in the field of economic analysis in Indian agriculture.

Credit for agriculture mainly fall into three categories : (*i*) short-term credit for purchase of seeds, fertilizers, labour and other items of self-liquidating capital; (*ii*) medium term credit for purchase of draft power, equipments, and small machineries and; (iii) long term credit for purchase of land, machines and development of land. Of these three types the demand for short term loan is very high as the small farmers need it most. The significance of short-term loan is that, it directly acts as catalytic agent for increasing productivity and employment in farm sector. Two important questions now emerge : (*i*) What is the extent of demand for short term credit in changing agriculture ? and (ii) what are its consequent impact ?

Objectives :

The objectives of this study are as follows :

(*i*) To estimate the requirements of short-term credit by different categories of farmers in Orissa, and (*ii*) To assess the possible impact of such loan on farm income and employment.

Hypotheses :

It was hypothesised that :

1. Capital absorbing capacity of different sizes of farms is much higher than present capital use, both at the adopted and recommended levels of technology.

2. The provision of adequate credit and its optimum utilization would result in significant increases in farm income and employment.

Assumption :

It was assumed that in case of vast majority of farms in Orissa the existing methods of farm operations are almost traditional in nature. This assumption was supported by several case studies carried out by different agencies during late sixties with regard to agricultural development in different parts of the State. These studies revealed that there is very little use of fertilizers and pesticides in Orissa and these were reflected by the low productivity of agriculture in Orissa. Broadly speaking, the existing art of cultivation in most farms in Orissa is very unscientific and far below the optimization point. The existing level of technology could therefore be considered as low level technology. However, the possibility of raising the productivity of agriculture through proper allocation of resources and combination of enterprises even at the low level technology can not be doubted.

But significant development in agriculture presupposes a technological breakthrough. This kind of technological transformation in our agriculture envisages improvement in the entire production process, particularly in the form of change in the use of various input factors, and this stage of production technique can be considered as higher level technology. Higher level technology in general is characterised by the adoption of high yielding varieties, use of fertilizers and plant protection materials, change in the mode of intercultural operations in farming.

It was further assumed that farm financing would help to accelerate this transformation process by providing an external tool to acquire modern inputs as the internal source of capital is

inadequate for optimum farm investment. It is more so in case of higher level technology which is capital intensive in nature.

The sample :

The sampling technique adopted for the field investigations was based on multistage stratified random sampling and the operational holdings as the ultimate unit. The district of Cuttack was divided into two homogeneous zones based on soil type, namely, alluvial plains and hilly zone. However, this study pertains to alluvial plains, since this zone had a significant influence on agro-economic conditions of the district. The villages of this zone were stratified into two categories namely, irrigated and unirrigated on the basis of irrigational potential. The villages having 80 per cent or more cultivated area under irrigation were taken as irrigated villages and those having less than 80 per cent of the cultivated area under irrigation were considered as unirrigated villages. The number of primary stage units, viz. the villages selected were four, two from each category.

For the purpose of selection of the ultimate unit (the holdings) the operational size of holdings of each individual household in each selected village was ascertained and recorded. All the recorded data of the operational holdings were classified in three size groups; namely, below 1 hectare, 1 to 2 hectares and 2 to 4 hectares. Classification must provide for some degree of comparability from time to time. Keeping this in view, classification of All India Rural Credit Survey and All India Rural Debt and Investment Survey of the Reserve Bank of India was considered as the basis. It was not advisable to have an additional size group with 4 hectares and above as 93 per cent of the farms fell under 4 hectares and 7 per cent was beyond 4 hectares.

In the final stage, 15 farms from each size group and from each of the selected villages were randomly selected. Thus, the total number of sampled farms was 180. In this situation, it was not ideal to determine the number of sampled farms in each size group according to the probability proportional to the total number of farms falling in corresponding farm size, since a very small number of farms were coming in the higher size group, which could not have allowed to draw inferences from such analysis. Hence, a fixed number of thirty in each size group was considered as an alternative for the selection of holdings.

Source of data :

The technical coefficients for the existing technology were generated from the survey data, whereas the coefficients for the higher level technology were drawn from the Agricultural Department recommended norms for various enterprises and processes of production. The input and output prices were taken at the 1970-71 price level.

Analytical tool :

Linear programming technique was used in order to estimate the credit needs of farmers both at the existing and recommended levels of technology. This technique is considered most ideal where the number of resource restrictions and possible activities are fairly large. Moreover Linear Programming aims at optimizing a given objective.

The average amount of capital used in agriculture at the present level by different categories of farms was figured out through survey method and this was taken as the resource constraint while developing optimum farm plans with the help of linear programming. Later the capital constraint was relaxed by allowing capital borrowing activities with 10 per cent rate of interest.

Optimal plans at the existing level of technology were obtained under two situations—one for the limited capital situation and the other for the unlimited capital situation. These plans were then revised for the higher level technology. A comparison of these situations could not only enable assessment of the capital and credit needs but also relative profitability of credit use in ideal farm operational situations.

Findings

The following tables were prepared from the sets of developed optimum farm plans to analyse both the objectives of this study. The comparisons were made between irrigated and unirrigated farms and between three different farm sizes.

Estimation of credit needs at different levels of technology :

As mentioned earlier although the existing level of crop production technology in Orissa is very low as compared to advanced

high level farm technology as suggested, the farms are generally not working at the optimum condition even at the low level technology. It is largely due to non-availability of institutional credit in rural areas. It is envisaged that during the Fifth Plan period the institutional agencies would be in a position to cater to the needs of small and medium farmers in this State. Keeping this in view an attempt has been made to estimate the quantum of Crop loan that would be required by different categories of farmers to take up most profitable farming. While Table I shows the short-term credit requirements of various categories of farmers under optimal conditions at the existing level technology, Table II indicates the same in case of higher level technology.

TABLE I

Short-term credit requirements of various categories of farmers under optimal farm plans in existing level of technology in Orissa.

Farm size group	Present level of cash expenditure (Rs)	Estimated cash expenditure at the optimum condition (Rs)	Additional capital or credit needed (Rs)
1	2	3	4
	Irrigated holdings		
I (less than 1 hectare)	155 (100)	403 (260)	248 (160)
II (1 to 2 hectares)	329 (100)	1233 (375)	904 (275)
III (2 to 4 hectares)	602 (100)	3047 (506)	2,445 (406)
	Unirrigated holdings		
I (less than 1 hectare)	88 (100)	165 (187)	77 (87)
II (1 to 2 hectares)	185 (100)	381 (205)	196 (105)
III (2 to 4 hectares)	430 (100)	855 (206)	425 (106)

(Figures in parentheses indicate percentages)

TABLE II

Short-term credit requirements of various categories of farmers under optimal farm plans in higher level of technology in Orissa.

Farm size group	Present level of cash expenditure (Rs)	Estimated cash expenditure at the optimum conditions (Rs)	Additional capital or credit needed (Rs)
1	2	3	4
	Irrigated holdings		
I (less than 1 hectare)	155 (100)	663 (427)	508 (327)
II (1 to 2 hectares)	329 (100)	2,154 (654)	1,825 (554)
III (2 to 4 hectares)	602 (100)	5,112 (849)	4,510 (749)
	Unirrigated holdings		
I (less than 1 hectare)	88 (100)	172 (195)	84 (95)
II 1 to 2 hectares)	185 (100)	408 (220)	225 (120)
III (2 to 4 rectares)	430 (100)	894 (207)	464 (107)

(Figures in parentheses indicate percentage)

From table I it is clearly evident that for achieving the highest possible profit in the existing low level technology the crop loan requirement would be in the order of 160 per cent, 275 per cent and 406 per cent of the present level of cash expenditure in irrigated farms of size groups I, II, and III, respectively and 87 per cent, 105 per cent, and 106 per cent in unirrigated farms of size groups I, II and III, respectively.

On the other hand, the crop loan requirements for adopting higher level technology would be much larger than that of existing level technology. The estimated figures are shown in Table II. From this Table it can be seen that for most profitable farming under the higher level technology the short-term credit needs would go up to the tune of 327 per cent, 554 per cent and 749 per cent of the present level cash expenditure for the irrigated holdings of size groups I, II and III respectively and 95 per cent, 120 per cent and 107 per cent of the present level cash expenditure for the unirrigated holdings of size groups I, II, and III, respectively.

Impact of crop loan on farm return :

Here an attempt is made to measure the impact of crop loan utilisation on farm returns under varied conditions. The empirical findings on this aspect have been presented in Tables III and IV for existing and higher levels technology, respectively.

TABLE III

Impact of short-term production loan on farm net return under optimal situation in existing level of technology in Orissa.

Farm size group	Net return in present situation (Rs)	Net return in optimum condition (Rs)	Added return (Rs)
1	2	3	4
	Irrigated holdings		
I (less than 1 hectare)	410 (100)	981 (239)	571 (139)
II (1 to 2 hectares)	900 100	2735 (304)	1835 (204)
III (2 to 4 hectares)	1749 (100)	5340 (305)	3591 (205)
	Unirrigated holdings		
I (less than 1 hectare)	164 (100)	265 (162)	101 (62)
II (1 to 2 hectares)	353 (100)	612 (173)	259 (73)
III (2 to 4 hectares)	827 (100)	1168 (141)	341 (41)

(Figures in parentheses indicate percentages)

TABLE IV

Impact of short term production loan on farm net return under optimal situation in higher level of technology in Orissa.

Farm size group	Net return at present situation (Rs)	Net return in optimum condition (Rs)	Added return (Rs)
1	2	3	4
Irrigated holding			
I (less than 1 hectare)	410 (100)	1344 (312)	934 (212)
II (1 to 2 hectares)	900 (100)	3826 (402)	2926 (302)
III (2 to 4 (hectares)	1749 (100)	7639 (414)	5890 (314)
Unirrigated holdings			
I (less than 1 hectare)	164 (100)	307 (166)	143 (66)
II (1 to 2 hectares)	353 (100)	703 (178)	350 (78)
III (2 to 4 hectares)	827 (100)	1402 (147)	575 (47)

(Figures in parentheses indicate percentages)

It can be seen from Table III that even at the existing level technology proper utilization of desired amount of crop loan would increase the net returns in irrigated farms by 139 per cent in farm size group I,204 per cent in farm size group II and 205 per cent in farm size group III, whereas in case of unirrigated farms the increase in net returns would be in the order of 62 per cent in farm size group I, 73 per cent in farm size group II and 41 per cent in farm size group III.

It is evident in Table IV that the impact of farm financing in case of higher level technology would be more pronounced than in case of existing level technology. The estimated figures indicate that with the availability of desired amount of short-term credit for the adoption of higher level technology in farms the net return from farm sources would go up to the extent of 212 per cent in farm size I, 302 per cent in farm size II and 314 per cent in farm size III, in irrigated condition, whereas this would rise to the extent of 66 per cent in size group I, 78 per cent in size group II and 47 per cent in size group III, in unirrigated situations.

Impact of crop loan on farm sector employment:

Table V indicates the possibility and extent of increasing employment opportunity in farm sector through the provisions of

TABLE V

Impact of short term production loan on farm employment under optimal condition in existing level of technology in Orissa.

Farm size group	Present level of employment	Estimated employment potential in optimal plan (man days)	Additional man days
1	2	3	4
	Irrigated holdings		
I (less than 1 hectare)	234 (100)	270 (115)	36 (15)
II (1 to 2 hectares)	402 (100)	435 (108)	33 (8)
III (2 to 4) hectares)	581 (100)	622 (107)	41 (7)
	Unirrigated holdings		
(less than 1 hectare)	191 (100)	205 (107)	14 (7)
II (1 to 2 hectares)	345 (100)	368 (106)	23 (6)
III (2 to 4 hectares)	416 (100)	440 (105)	24 (5)

Figures in parentheses indicate percentages.

crop loan in the existing level technology. Similarly table VI reveals the impact of crop loan on employment in the higher level technology.

TABLE VI

Impact of short term production loan on farm employment under optimal conditions in higher level of technology in Orissa.

Farm size group	Present level of employment (man days)	Estimated employment potential in optimal plan (man days)	Additional man days
1	2	3	4
	Irrigated holdings		
I (less than 1 hectare)	234 (100)	308 (131)	74 (31)
II (1 to 2 hectares)	402 (100)	493 (122)	91 (22)
III (2 to 4 hectares)	581 (100)	737 (126)	156 (26)
	Unirrigated holdings		
I (less than 1 hectare)	191 (100)	228 (119)	37 (19)
II (1 to 2 hectares)	345 (100)	390 (113)	45 (13)
III (2 to 4 hectares)	416 (100)	496 (120)	80 (20)

(Figures in parentheses indicate percentages)

In case of existing level technology it is estimated that 7 to 15 per cent of additional man days work in irrigated farms and 5 to 7 per cent man days work in unirrigated farms would be required in order to operate the farms at optimum situations.

However, the requirement of additional man days of work for the adoption of higher level technology would be comparatively much

larger than in case of existing lower level technology. The study is reflected in Table VI which shows that 22 to 31 per cent of additional man-days work would be needed for irrigated farms and 13 to 20 per cent of additional man-days work would be necessitated for unirrigated farms at optimum situations.

Conclusion :

The capital absorbing capacity of our farms is much higher than the present level of capital use in the traditional form of agriculture. In other words, there is excess capacity in farm sector in regard to crop production investment. The requirement of crop loan would be very large for shifting the level of technology from existing to higher forms since the new technology is moderately capital-intensive in nature. Farmers would be able to operate their farms at optimum situation, if they are provided with the desired amount of institutional credit. The increased farm outlays would invariably increase the net farm returns as well as farm employment both at the existing and higher levels of technology. However, in case of higher level technology, the impact of direct production finance would be more prominent. At the same time more promising net returns and employment opportunity would be forthcoming in case of irrigated farms as compared to unirrigated ones, due to very nature of our new technology.

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Repayment capacity of Small farmers at the Existing level of technology

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Assessment of one's repayment capacity is considered most useful both from the borrower's point of view and the lender's point of view. This is more so in case of small farmers whose ability to repay is always doubted in absence of any valid procedural assessment. Before a lender lends loan to a farmer it is expected that he would like to be certain about borrower's repayment potential and planning. Similarly the farmer who takes a decision to use credit in his farm business must expect to know for certain that the rate of turn-over would be large enough to repay the loan without any difficulties. In other words the study of repayment capacity increases the ability to make sound investment decisions. Besides this kind of exercise helps better understanding between borrower and lender.

Many of us feel that credit cannot be used productively in the existing level of technology. But this is not a correct assessment. With the proper combination of enterprises and judicious allocation of resources the returns from farm sources can considerably be increased even at the existing level of technology.

The present study was undertaken to make an objective assessment of the repayment capacity of such farmers owning different small sized holdings with and without irrigation and at the existing level of technology. On the basis of the estimate of the repayment capacity of the various groups of small farmers, the credit agencies may promptly advance loan with minimum delay. Thus the result obtained will increase the efficiency of credit operation of the various institutions concerned.

Methodology

The villages in the block were classified into irrigated and unirrigated groups and one from each was selected at random with probability proportional to the cultivating area. The operational farms of these two sample villages were enumerated and grouped into three sizes i.e. 2-4, 4-6 and 6-8 acres. The above classification of small farms was made to fall in line with the concept developed by Small Farmers Development Agency operating in the area. The result therefore applies only to these groups of farmers only. From each of the villages and from each size groups five farms were selected at random and thus the sample constitutes a total of 30 farms. Data were collected by survey method in the year 1970-71.

Background study of the sample villages

While the irrigated village has an intensity of cropping of 214.53%, the corresponding figure for the unirrigated village is only 131.79%. Rice is the main crop of the area occupying about 46% of the gross cropped area. While important crops such as high yielding variety of paddy and jute predominate in the irrigated village, only groundnut is of some significance in the unirrigated village. Apart from the local paddy varieties, winter vegetables such as cauliflower, tomato, lady's finger etc. are also abundantly grown in the irrigated village. This village has also some locational advantage with regard to marketing and credit facilities.

Estimate of disposable income

As repaying capacity is functionally related to disposable income, it is necessary at the outset to determine the level of disposable income obtained by various farm categories. The disposable income of a farmer is broadly composed of two main components (i) Income derived from the farms for the use of his land labour and capital. (ii) Income derived from non-farm activities after allowing for the necessary cash expenses. The income from the farm consists of (a) Farm business income from crop husbandry and (b) Farm business income derived from animal husbandry enterprises. The income from non-farm activities may be derived from different sources such as hired wages, shop-keeping, blacksmithy, bidi-making and oil manufacture etc. Another source of income is by sale of assets. Since this has been very negligible among the sample farms, it has not been included in the estimate of total disposable income.

To start with the farm business income from crop husbandry, the difference in the cropping pattern and the intensity of cropping will lead one to believe that this measure of profit is likely to be higher under irrigated condition. Table I will testify and confirm the above contention.

TABLE I

Dispersion of farm Business income (Crop husbandry) in rupees per farm between the two categories of villages with and without irrigation.

Farm size (in acres)	Irrigated village	Unirrigated village	% increase
2-4	4615.97	1996.05	131.25
4-6	6207.17	3166.40	96.03
6-8	7790.15	3977.79	95.84
Weighted average	6334.74	2979.82	112.59

The farm business income in the irrigated village is roughly two times that of the Unirrigated village. The effect of irrigation on incomes generated from crop husbandry is direct and more pronounced. This explains why approximately more than 100% increase in farm business income from this sector has been secured by farmers owning varying sizes under irrigated condition. The causes leading to this difference evidently lie in the difference of the intensity of cropping and cropping pattern. Further the data provide clear evidence of the existence of a positive correlation between farm business income and the farm size within each village type. The second source from which the farmers augment their income is animal husbandry such as dairy, goat keeping and poultry. Its distribution over various farm categories finds mention in table 2.

Not only income from main sources viz. crop husbandry has the tendency to increase with the farm size, but also the same tendency is clearly discernible from the supplementary enterprises. The irrigated village is associated with a higher level of farm business income to the tune of 10.82% due to supplementary enterprises over the unirrigated one. This is chiefly attributed to

TABLE 2

Distribution of Farm business income in rupees per farm from supplementary (animal husbandry) enterprises among the various categories of farm with and without irrigation

Farm size (in acres)	Irrigated village	Unirrigated village	% increase
2-4	630.00	540.00	16.67
4-6	770.00	701.40	9.78
6-8	1130.00	970.00	16.49
Weighted average	781.29	704.99	10.82

the better feeding of animals in the former over the latter. The difference between them is however not perceptible. Finally the component contributing to the total disposable income is the income from non-farm sources. The sources from which it has been derived has been mentioned earlier. Its distribution among the varying farm sizes of the two village types is specified in table 3.

TABLE 3

Distribution of non-farm income in rupees per farm under varying farm sizes with and without irrigation

Farm sizes (in acres)	Irrigated villages	Unirrigated villages	% increase
2-4	2040.00	613.35	232.59
4-6	1960.00	1600.00	22.50
6-8	2565.00	2120.00	20.99
Weighted average	2382.04	1314.43	81.22

The table 3 is indicative of an increase in the level of increase in the level of income due to non-farm sources to the extent of 81.22% in the irrigated village over the unirrigated one. The test of significance also confirms the observation that per farm difference in non-farm income between villages and farm sizes

is significant at 1 % level of probability. This difference however cannot be ascribed to irrigation. It may be recalled that the irrigated village has some locational advantage in regard to facilities for marketing and credit. Occupations such as Bidimaking, oil manufacture give the sample farmers of the irrigated village an adequate income. Apart from this the major percentage difference is contributed by the small farm size group. The sum total of the three components of income discussed above provides an estimate of total disposable income. This is the income which influences consumption spending, saving and repayment capacity. Before any estimate of the latter measure is obtained, it is necessary to examine the percentage increase in total disposable income, as also the perentage increase in the consumption spending as a consequence thereof. Table 4 brings out the same.

TABLE 4

Relationship between percentage increase in the total disposable income and percentage increase in consumption spending in the varying sizes of farms with and without irrigation in rupees per farm

Farm sizes (in acres)	Total Disposable income			Total consumption spending		
	Irrigated village	Un-irrigated village	% increase	Irrigated village	Un-irrigated village	% increase
2-4	7285.97	3149.40	131.34	4419.40	2755.40	60.39
4-6	8935.17	5467.80	63.41	5793.80	3922.60	47.70
6-8	11485.15	7067.79	62.50	6845.40	4456.00	53.62
Weighted average	9498.07	4999.24	89.99	5809.40	3211.24	62.4

Irrigated village has a consistently higher level of income than its counterpart in the unirrigated village. Its difference between the two village types and farm sizes is statistically significant at 1% level of probability. This is otherwise also evident from the table. Approximately there is 90% increase in the disposable income brought about mainly by irrigation. A part of the increased income thus obtained is expected to be devoted to consumption spending.

Approximately 62.4 % increase in consumption spending is observed as against 90% increase in income levels.

Gross saving rate

Before any attempt is made at estimating the repayment capacity, it is necessary to objectively assess the gross saving rate. For, the repayment capacity is estimated by deducting the expenditure on capital formation items from gross savings.

From the above analysis, one may safely assume that a part of increased income generated by irrigation factor be available for savings. The rate of gross saving depends upon the marginal propensity to consume of the two groups of farmers, with and without irrigational facilities. The linear consumption functions of the model C=a+byd for the farm family is fitted to the data to obtain an estimate of this parameter,

where C=consumption spending in rupees
Yd=Disposable income in rupees
b=Regression co-efficient indicating marginal propensity to consume, a=consumption spending at zero level of disposable income.

TABLE 5

Parameter estimates for marginal propensity to consume and gross saving rate of the two categories of villages. (Consumption-Disposable income relation in rupees per farm family).

Village Types	Regression equation	r^2	Marginal propensity to consume b (1)	Saving rate (1-b) in percentages
Irrigated	$C=2538.60+0.6074Y_d$	0.4452	0.6074** (21.62)	39.26
Unirrigated	$C=1549.26+0.7077Y_d$	0.6077	0.7077** (33.25)	29.23

** Significant at 1 % level of probability.
(F ratio are in parentheses)

If the regression co-efficient 'b' of the equation represent marginal propensity to consume, the gross saving rate can be defined as (1-b)

The parameter estimates resulting from the regression equation on marginal propensity to consume and the gross saving rate for the farm family finds mention in table 5.

The two sets of regression equations specify consumption disposable income relationship per farm family. Since the regression coefficients are highly significant, one can assert with reasonable confidence that there is a close relationship between the values of consumption spending and disposable income. Since further, the regression coefficient represents the marginal propensity to consume, the data reveal that the consumption spending increases by 0.71 and 0.61 respectively in the unirrigated and irrigated villages per unit change in the disposable income. The conclusion that emerges from this study is that families with larger disposable income as in the irrigated village have lower marginal propensity to consume. This propensity conclusion is further strengthened by testing the significance of the difference of the two regression coefficients. Should this be true there is reason to believe that the rate of gross saving (1-b) in the irrigated village is significantly higher. Expectation of saving to the tune of 40 and 30 rupees out of each hundred rupees of additional disposable income generated cannot thus be ruled out in the irrigated and unirrigated village respectively. It needs also to be mentioned that the coefficient of determination r^2 which specifies the extent of variation in consumption as explained by the disposable income have considerably higher values. As such the assumption of linearity at least for the ranges of farm categories under study appears to be valid. The percentage of total disposable income saved by the farmers owning varying farm sizes of the two categories of villages as revealed from sample data, may be of interest. This is specified in table 6.

It is worthnoting that the farmers in the unirrigated village with about half the disposable income of that of the irrigated one have a significant saving rate-increasing with increase in the farm size. Vagaries of weather have been the

TABLE 6

Distribution of gross saving rate in rupees per farm of the two categories of villages with varying farm sizes.

	Irrigated village			Unirrigated village		
Farm sizes (in acres)	Dispo-sable income	Gross Saving	% of gross saving to income	Dispo-sable income	Gorss Saving	% of gross saving to Income
2-4	7285.97	2866.57	39.34	3149.40	394.00	12.51
4-6	8937.17	3143.37	35.17	5467.80	1545.80	28.26
6-8	11485.15	4589.75	39.96	7067.79	2611.79	36.95
Weig-hted average	9498.07	3688.67	38.34	4999.24	1788.00	27.96

main factor determining the level of income in the dry areas. Added to this the wide spread monoculture of rice introduces a great deal of risk and uncertainty in agriculture. As a consequence thereof there is a wide fluctuation in income between years. Farmers in such a region are therefore, prompted to effect some saving to overcome the adverse time in spite of low level of income. However, the co-efficient of correlation between the absolute disposable income and the percentage of saving is estimated at 0.394 and 0.849 in the irrigated and unirrigated village respectively. While the former with thirteen degrees of freedom is not significant, the latter is highly significant. On the other hand the coefficient of correlation between the gross amount saved and the disposable income in absolute terms are estimated at 0.898 and 0.949 for the irrigated and unirrigated village respectively. Both the values are significant at 1% level of probability. The study supports the hypothesis that irrigation generating higher levels of disposable income brings about higher saving rate. Further the data in table 6, provides evidences in favour of another hypothesis that larger farm's securing higher levels of income have higher rate of saving.

Repayment capacity

The repayment capacity as mentioned earlier is subtracted value of investment made on the farm on different capital items from the gross savings. The pre-existing liability in the form of current debts, however, becomes a part of the estimate of repayment capacity. The distribution of this measure between varying farm sizes with and without irrigation is specified in table 7.

TABLE 7

Repayment capacity of small farmers of owning varying farm sizes with and without irrigation (in rupees per farm)

Farm sizes (in acres)	Irrigated village			Unirrigated village		
	Gross savings	Capital investment	Repayment capacity	Gross saving	Capital investment	Repayment capacity
2-4	2866.57	1100.00	1766.57	394.00	212.50	181.50
4-6	3143.37	1046.00	2099.37	1545.20	454.00	1091.20
6-8	4589.67	1434.00	3155.67	2611.79	797.00	1814.79

The rate of investment on items of capital formation on farms is larger under conditions of irrigation. All of them have good repayment capacity also. A minimum of Rs. 2000.00 per annum per farmer can safely be advanced as short term loan. It may be remembered that the bulk of the area where S. F. D. A. scheme is operating is unirrigated. Further, the bulk of the small farmers are owning land within four acres. There people, do not have a significant repayment capacity at the existing level of technology. Their credit-worthiness and repayment capacity can only increase with appropriate diversification and integration of modern technology in farming, credit can be advanced to them only at a risk. For the rest however, a minimum sum of Rs. 1000.00 per farmer per annum can be safely advanced without going into the further details.

Institutional Framework and Policy Implications of Regional Planning

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After more than two decades of planning, India does not seem to have emerged from economic stagnation and poverty. It is still groping in darkness and the silver lining of economic prosperity for the vast multitude of its people is yet to be seen on the horizon. There may be several reasons for the present state of affairs. But the institutional frame in which people can aspire to improve their economic lot does not seem to exist in India.

The main purpose of economic development is to remove poverty from people, by improving the living conditions of those in low income groups (say, for example, people below poverty line drawn at Rs. 48.00 at the price level of October, 1973). This can be attained if the national income grows at a faster rate than the increase in population and the incremental income progressively accrues to the people below poverty line. However, such accrual of additional income to the people in low income groups cannot be taken for granted. It has been our experience that economic development in a backward economy tends to increase unequal distribution of income and assets among individuals and groups, unless accompanied by specific institutional changes and policy decisions to reverse the trend.

The unequal distribution of income and wealth in its inter-personal aspects has engaged much attention in the hands of economists. However, there is another aspect to the problem, viz., spatial disparity of income which is often being overlooked in analysis and economic model building. Spatial disparity in the distribution of national income often explains poverty and low

productivity in certain regions. Poverty in its spatial dimension, thus, offers a new area for investigation and analysis.

An increase in national income or wealth does not necessarily imply a reduction of spatial disparity in income. In traditional societies like India, development activities come to be concentrated at a few centres at the beginning, as a necessary strategy for realising a higher rate of growth of national income. The rapid growth of those few centres create not only problems of slums, congestion and its consequent economic hazards, but also the problems of brain and resource drain in the adjoining areas. They tend to "act as suction pump, pulling the more dynamic elements from the more static regions. The remainder of the country is, thus, relegated to a second class peripheral position. It is placed in a quasi-colonial relationship to the centre, experiencing net outflow of people, capital and resources most of which rebound to the advantage of the centre where economic growth will tend to be rapid, sustained and cumulative."

Myrdal's theory of cumulative causation explains the real socio-economic disparity in India. According to this theory an area is poor, because it is poor. Unless specific institutional framework in the national planning is created to tackle the problems of economic and social disparity in its areal aspects, they will continue to be a growing feature in the national economy. Therefore, it is imperative to take corrective measures to boost up the sagging economies of the poor regions.

How to lift the poorer areas, is the moot question. So far, in our planning strategy, the whole country is treated as a point devoid of space. The investment policy is largely concerned with the choice of sectors and sub-sectors. Areal aspect of investment is largely neglected. Similarly in the policy formulations, the policy framers operate on the thesis that what is true for a nation as a whole is also true for regions and sub-regions as well. This misconception in policy formulation is largely due to the neglect of space in the planning framework. Consequently, the areal disparity in socio-economic field in India is on the increase and the poverty eradication programme so far has been a theoretical proposition.

Poverty has an anatomy of its own, depending on areal socio-economic, political and anthropological characteristics. Without proper analysis of the anatomy of poverty of a region, it is unrealistic to prescribe a blanket remedy on a national scale. It is necessary to develop a 'regional frame' in our national programme for socio-economic development.

Balanced regional development in our plan documents has only a political and welfare orientation. It lacks the institutional frame in the national planning and, therefore, it is less useful as an operational concept. It is due to the absence of an operational framework of regional planning that the areal differences in income tend to increase in India as a concomitant of economic development, inspite of some corrective measures at the national level.

Objectives of regional planning

Regional planning, according to Mackaye, "consists in the attempt at discovering the plans of nature for the attainment of man's ends upon the earth, it visualises industry as the servant of culture and it's chief concern is the guidance within a region of the flow of civilisation. This may consist of electric fluid, of lumber, of wheat, of beer or dairy products. It may consist of the flow of population, of housing and living facilities."

Regional planning sees people, land and industry etc. as a single unit. It tries to weave the socio-economic development to the needs of people of different regions in an inter-connected system of national economic growth. It means neither decentralisation nor centralisation of everything, since too much decentralisation amounts to anarchy and too great centralisation breeds inefficiency and bureaucratic despotism. Regional planning also does not aim at regional self-sufficiency, as it tends to be uneconomic in the modern technological context. It tries to develop as many as economic activities in a region as its natural and human resources would sustain, so that regional stagnation and poverty can be removed and an invigorating national economy in an inter-regional system can be built. It implies identification of programmes in terms of commodities or services in tune with the resources, people and their locality in a healthy fusion of economic upliftment.

Institutional framework

According to John Orchard, "the optimum region for social and economic planning should possess certain characteristics: (1) There should be some unifying core, (2) its area should include all the territories tributory to the core, (3) there should be an absence of serious conflicting interests within the area, (4) the regions should not be so diversified that it will place too great burden upon the ability and training of the planners."

Broadly, on the basis of these characteristics, a planning region may assume the following types: (1) Metropolitan region, (2) Natural resource region, (3) Axial region and (4) Depressed or backward region.

These regions may not always conform to an administrative region like district or lower units of administration. In a federation executive and legislative powers are constitutionally divided between the union and the states. In a state, administrative and development authorities are exercised at district, block and village levels. However if a backward economy is to be developed through the process of regional planning, we will have to work at a number of spatial levels, sometimes, superseding the administrative units, depending on the objectives and scope of such planning.

A metropolitan planning has an organic centre around which there are peripheral areas. These areas are under the economic influence of the urban centre and has functional linkages with the latter.

The natural resource region centres around important natural resources like minerals, river valley, sea coast (or port) or rich forests. The life of the people of the area are functionally linked with the natural resources of their region and their proper exploitation and development determines their economic life.

The axial region largely develops along the transportation line like railways, irrigation or an important highway. Along with such lines, new activities are generated.

Finally there are some depressed areas or regions which generally lie in between growth centres. These regions suffer

from the backwash effects of the growth centres and undergo the drain of men and resources. Much of the poverty are found in such areas, on account of the low level of economic activities. The development of these depressed regions is the most importment problem of regional planning. The anatomy of poverty in all these regions widely differs depending on the regional characteristics. Therefore, analytically it is unsound to think in terms of average poverty for all these regions and for that reason it will be operationally ineffective to prescribe a common socio-economic treatment through planning at the national level.

It is, therefore, necessary to discover the hub of economic life in the region for anatomical dissection in order to find out the cause of economic stagnation and poverty of people for developing a proper planning approach.

Requisites of regional planning

The process of regional planning involves the following important steps :

1. Identifying and demarcating a region.
2. The focal point or the hub of the economic life of a region should be identified and the functional linkage of the people with it should be determined.
3. The flow relationship of the region with the external world should be accounted for.
4. Socio-economic needs of the regions both on short term and on long term basis should be determined.
5. Determination of the institutional structure for implementing a regional plan within the framework of a state and national plan.
6. Machinery for evaluation of a plan.
7. Institutional arrangement for collecting regional data for the purpose of planning.

Policy implications

The process of regional planning and its successful implementation raises the following questions.

1. What is the region which should be planned for ?
2. What are the human and material resources available ?

3. What are the socio-economic objectives ?
4. What are policy options and implications ?
5. What is the magnitude and character of investments needed for the region both on short term and on long term with reference to its socio-economic objectives ?
6. How should the location of investment be determined ?
7. What will be the cost of investment ?
8. What should be the layout and design of the project ?
9. What is the source and instrument of collecting socio-economic data on which investment decision should be taken ?

Rational answers to all these questions need an inter-disciplinary approach and productive coordination between politicians, geographers, regional scientists, sociologists, engineers and statisticians. The problems which need to be tackled for regional development are beyond the scope and capacity of a present day administrator, as his training, skill, approach and attitude are inadequate for the purpose. Regional development poses a challenge which can be tackled by an inter-disciplinary team of experts, and requires an inter-disciplinary technique directed to strike at the regional problems at their roots with a view to make the poverty eradication programme a working proposition.

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Achievement of the Targets of the Fifth Five Year Plan of Orissa

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In the case of an economic Plan, experience of the other countries is as much important as the experience of the conditions of one's own country. The experience of the other countries should not be superimposed on the native soil without taking the political, social, economic conditions of the country into consideration. That is because it is not the formulation of the plan which is as important as the implementation of it. 100% realisation of the plan targets is a rare possibility. A margin of 5% on either side of the target indicates that the plan has been properly formulated and implemented. That is particularly so when natural factors play a significant part as in the agricultural sector particularly in India and more particularly in Orissa where agricultural and other extractive industries, Co-operation, Community Development and Panchayats and Irrigation, Flood Control and power account for 610 crores of rupees out of a proposed outlay of Rs. 1,022.00 crores in the Fifth Five Year Plan assumed to be available so far in the State Sector.

Therefore, there arises the necessity of administration in the plan. By administration I mean, "management of business, management of public affairs" following the 'The Concise Oxford Dictionary of Current English'. Planning Administration is different from Traditional Administration. For the Administration under the plan, a suitable scheme of incentives must be provided for. When vast sums of money will be spent for the Plan, the existing machinery may be inadequate. If it is over-burdened with work, it may not properly implement the plans. Therefore, it is necessary that Economics, Commerce, and Agriculture graduates and people trained in the field of Co-operation be entrusted with the specific responsibility of realising the plan targets. At the same time it is necessary that there should be more of decentralisation in the administration of the plan.

Responsibility must be fixed and not divided and suitable rewards and punishments be administered depending upon performance and negligence respectively. The plan then will be taken seriously and realisation of the target will be easy. If the planning Administration is so organised at present, well and good and the plan implementation will not be a difficult task. It is then that the fault for the non-realisation of the plan rests squarely on the Plan formulaters. It is on this background that I am putting forth my observations on the Approach to the Fifth Five Year Plan of Orissa.

1) Capital-output ratio :— The first objective of the plan is economic growth. The second, third and fourth objectives are meant to reduce economic, social or regional inequality. Where growth is the sole consideration, there is no difficulty. Where equality is the consideration, there is also no complication. Inequality is not a problem in developed economies. Inequality is a problem in under-developed economies. So the planners have rightly advocated the necessity of growth with equality. But where there is a conflict between growth and equality, equality can be sacrificed in the interest of growth. If both growth and equality can go together, it is golden.

The Capital-output ratio is realisable if the agricultural and irrigational targets are realised in the plan. The agricultural sector is the most conservative sector in every country and so it is more so, in a tradition-bound country like India. The targets for commercial crops in Orissa are realisable given the price incentive or atleast price support. Profits from the commercial crops should be higher than the profits from the subsistence sector of farming. Agricultural price policy does not depend upon the state, it depends upon the Central Government. If the monetary policy is expansive during the period of the plan and the producers of commercial crops are given the necessary price support or price guarantee and there is proper administrative organisation for the purpose, then the targets for commercial crops are realisable.

It also depends upon the extent to which the farmers use the available credit facilities. The farmers are not very hopeful in getting credit in time. Even those who get do not repay in time. So the response of the farmers is not very encouraging for plan implementation. So revitalisation of the credit structure should be experimented

upon and acted upon in the I.A.D.P. areas and such other areas where commercial crops are grown.

Utilisation of fertilisers should be linked with land reform programmes. Fertilisers can be utilised by the progressive farmers rather than the conservative, small and illiterate farmers. Fixation of ceiling and utilisation of fertilisers do not go together due to the same conservatism and the ignorance of the small farmers. Since the progressive land owners will be eliminated and fail to act as examples for the smaller ones, consumption of fertilisers cannot make much headway in the interest of economic growth.

When 38 % of the total population of Orissa consists of tribal populations, it is no use adopting land reforms for enhancing agricultural production. Let land reforms be given a good bye for at least five years. Neither co-operativisation of farms nor ceiling fixation nor consolidation of holding though desirable in the long run, can help a lot in increasing agricultural production, in the short period.

(2) Now that there is greater equality in the distribution of land than in the pre-1950 days, even that amount of concentration which is there is not inimical to growth in the developed agricultural belts. But in the underdeveloped regions it is certainly inimical to growth. So fixation of ceiling and land distribution has got a favourable effect on productivity in the long run. But the darker side of ceiling particularly when inequality in the distribution of land has been much reduced either by the process of natural transfer, that is, sale or the abolition of intermediaries, cannot be ignored. It will produce an adverse psychological effect on the rich agriculturalist who is so much attached to land that he will have no incentive to improve his land.

So when the state policy is to compromise with private enterprise and give sufficient place to private initiative, there is no harm if the cry to the fixation of ceiling is put to a halt for a few years more.

Rather, the state can frame legislation to the effect that if land is kept uncultivated or is improperly looked after, it can be acquired for public purposes in the interest of growth. In

that case, the substantial farmers will either cultivate their land more efficiently than before or sell them away-definitely at a lower price since the poor cannot afford to pay a very high price and the rich will have no craving for land and then it will produce the necessary redistribution effect and growth effect.

The fact is clear that with the existing technique usually the productivity of a small holding is higher. But that is not a general rule. Even, very often, the per acre yield of the medium farmer is quite high. Ceiling legislations do not touch the medium farmers. They only touch the large farmers. Though this is good both from the standpoint of growth and equality since it has got an adverse psychological reaction on the most vocal rural population, it is likely to have an adverse effect on productivity by generating further reaction against the adoption of improved agricultural practices. So it is better for the state at present to put the greatest stress on agricultural productivity alone without emphasising so much on ceiling.

Consolidation of holdings is highly desirable in the interest of improved agricultural practices. But there is not much room for voluntary consolidation of holdings particularly in the coastal area. So in order that it will make some headway, there should be compulsory consolidation of holdings. If that is not politically feasible, it can be given a good bye for a few years more and the existing administrative machinery should not be unduly overburdened.

(3) Expenditure on medium and major irrigation may be made either on the existing schemes or on new schemes. Since the new schemes will have a long gestation period, they will be capital without producing output during the period of the Fifth Five Year Plan. Since the plan frame emphasises the consolidation of the existing medium and major irrigation projects and it aims at spending Rs. 100.00 crores on major and medium irrigation and Rs. 10.00 crores on Flood Control and Drainage, if it irrigates 26 lakh acre of additional land, the production target can be realised.

(4) Power is both a producer's good as well as a consumer's good. It should be used more for acting as a producer's good

rather than a consumer's good. So let power consumption be associated with irrigation and agricultural and industrial production rather than with domestic consumption. Then only the expenditure of Rs. 146.00 crores will be justified.

(5) In the interest of growth, utilisation of the existing industrial capacity is the correct approach. The programme that medium large industries will be developed in the central sector, private enterprisers should be encouraged and the existing capacities should be utilised fully is justified. There is no room for further extension of state undertakings when the public undertakings are running less efficiently than their counterparts in the private sector. If private enterprise is abusing its power, state has acquired sufficient power to control and regulate them and even to take them over. So both in the interest of socialism and growth, it is necessary that the state should lay down the basic framework, take up such undertakings which it can run efficiently and regulate all others not working in the best interest of the society.

(6) The structure of the villages will remain the same and there will be more of marketing centres when agriculture will develop. Small townships will grow up if the agricultural strategy succeeds. New growth points should be developed particularly in the under developed areas of the state. That is particularly true in such districts as Kalahandi, Koraput, Phulbani, Keonjhar and Mayurbhanj. These are the most back-ward districts of the state. What is needed in them is the establishment of certain pockets of industrial and agricultural developments so that they will act as examples for the remaining parts of these areas. In these areas, there is also the potentiality for growth in the shape of able bodied men and forest and mineral resources. What is lacking is the absence of the initial stimulus. People in these localities are not handicapped by set notions like the people of the traditionally prosperous areas and the developed areas of Cuttack, Puri and Balasore. People there are physically strong and mentally receptive. Suitable efforts should be made in the interest of growth and equality in those areas. Growth and equality are not competitive objectives in the tribal areas; rather they are complementary. Creation of suitable growth points in such localities will be very useful.

In the interest of planned growth, let urbanisation in the developed areas be left to the intelligence and capacity of the people themselves. State planning is not so much necessary for U. S. A. as for Africa. State machinery should be more helpful to Madhya Pradesh and Bihar than Tamilnadu or the Punjab. In Orissa the plan should help the urbanisation of the Tribal and western belt than the coastal belt. So planned urbanisation through state effort is more called for in Phulbani and Kalahandi and Mayurbhanj or Keonjhar than in Cuttack, Puri or Bhubaneswar or Rourkela. Of course slum clearance and restriction of unplanned growth is the responsibility of the state In the developed localities. If the people of Cuttack city remain in slum instead of moving towards Bhubaneswar or the people of Puri town remain amidst dirt and filth instead of moving towards Sakhigopal, the fault is theirs. But if the people of Phulbani remain in jungles, the fault is not theirs; the fault lies in others who are exploiting them. So both from the standpoint of equality and economic growth, the planning machinery should make suitable efforts to develop growfh points in the Tribal areas. This will have the effect of eradicating state level regional disparity as well as produce economic growth and generate greater spread effect.

In the Tribal areas the need is demand and market. In the absence of demand and a market for goods, production is handicapped. Commodities are sold at a fabulously low price in the harvest season. Economic incentives are more necessary in these areas than elsewhere. There should be more of investment on human capital in such areas. This will be done on state initiative rather than private initiative.

For the existing urban areas, suitable incentive should be given to overcome slum-living and the development of the rural areas will automatically change the size and composition of the village. Town planning may be necessary in some over-congested towns but there should be unnecessary expense on village planning in the interest of growth. Let there be more expenditure on agricultural and irrigational development and the supply of power for irrigation and industrial purposes and let there be the provisions of fertilisers after irrigation and after that let the villagers in the developed areas be left to take care of themselves. Scarce resources cannot be utilised for village level planning. If village level planning

is at all necessary, it is necessary in tribal belts rather than in the comparatively more developed village areas.

(7) Let education be compulsory upto eleven years. Between eleven to sixteen, let education be technically oriented. Let boys who do not want to acquire knowledge on traditional disciplines such as History, Geography, Sanskrit, Mathematics and Science be given extensive training in crafts along with literature and General Knowledge. So at that stage there will be two sections of students, some fit for higher education and others meant to earn a living as early as possible. Let them acquire khowledge about Family Planning, Agriculture, Carpentry, Weaving and the like. But the allocation of Rs. 2.00 crores is inadequate for the purpose.

Let there be vocationalisation of formal education at the higher stage also as far as possible. Let a suitable plan be drawn for vocationalising general education. In that case, vocational education should be linked with the economic planning of the country—Educational planning and Economic planning should be linked together.

(8) Quality of the human material is certainly important in the process of economic growth. If material capital is important in the process of economic growth at a later stage, quality of the human material is certainly important in the initial stage of economic growth. Rs. 295.67 crores have been ear-marked for expenditure on the quality of the human material. This constitutes about 27 % of the plan allocation in the state sector in the Draft Fifth Five Year Plan. This is not a bad sum considering the amount at our disposal for the plan as a whole.

Improvement of the quality of the human material in the tribal zone is urgent. There should be a publicity machinery consisting of suitable people. There should be an organisation consisting of educationists, social workers, political workers representing all political parties and a few administrators dedicated to the task of village upliftment. The proposed expenditure of rupees one crore on publicity appears to be inadequate.

(9) There are various ways of raising additional resources from the agricultural sector—land revenue instead of being

abolished should be doubled or tripled. During the days of higher agricultural prices, it would not be a higher burden on the agriculturists if the land revenue is increased.

In the already developed areas as well as the proposed growing areas, special assessments may be levied at a progressive rate. There is not much of scope for Agricultural Income Tax. Thus some additional resources may be raised from agriculture. But too much of reliance should not be placed on taxing agriculture. In the earlier stages of development, the agriculturists need some incentive.

(10) Under the circumstances greater dependence on the Central Government is inevitable. If the Central Planners want to bring about regional equality among different states and if the state planners also want the development of the rural areas in Orissa, higher investment of central funds in the state is desirable. The existing pattern of Central assistance that is, 60% on population, 10% on backwardness, 10% for spillover projects, 10% for special problems, and 10% for tax efforts is inequitable and is not in conformity with the plan objectives of the Indian Union. Since the plan objectives of the Central Government are to ensure regional balance, allocation of 10% of Central assistance for backwardness, and 10% for special problems such as flood and drought and the existence of a higher percentage of Tribal Population is inadequate for backward state like Orissa.

With these conditions alone the proposed capital-output ratio will be realised and the targets of the Fifth Five Year Plan of Orissa will be realised.

Progress of Rural Electrification in Orissa

Sri M. Chakraverty
&
Sri M. Champati *

Introduction

It is needless to describe the importance of Electrification in the Economic development of the state. It is a common experience that the electrification is followed by rapid industrial growth. The towns are more developed as compared to villages because of the fact that the former are provided with electricity. The electrification of the towns in its turn results in the establishment of various types of industries in these places. Although such Industrial growth is far from expectation in the rural areas, here there is much scope for development of agriculture, agro-industries and small scale industries. Besides, the benefits of electrification accruing to urban people can be made available to the people residing in rural areas of the state through rural electrification and thereby the regional disparity in this respect can be reduced though cannot be altogether removed. Increased emphasis has, therefore, been laid on the rural electrification in recent years.

Importance of electrification in lift irrigation

Now the ageold traditional agriculture has been replaced through the help of modern technology. Scientific agricultural practices have created confidence among the cultivators in that the agricultural production can be taken up on commercial basis. As a result of this, the lands that were being cultivated for the subsistence of the poor cultivators, have now been put under commercial crops. Improved agricultural practices constitute raising of newly evolved

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HYV crops, use of fertilizers, insecticides and pesticided in adequate quantity and proper land use with intensive agricultural practices. All this has become possible only through provision of assured irrigation which serves as the basic input for adoption of improved agricultural practices. But in Orissa, so far 13.61 per cent of the net cultivated area, has been provided with irrigation facilities. It is therefore, highly essential to extend the irrigated area of the state in order to enhance agricultural production.

Irrigation facility is provided through major, medium and minor irrigation projects in this state. Minor irrigation constitutes flow irrigation and lift irrigation. Lift irrigation projects cater to the irrigation needs of those cultivators who have no other facility for irrigating their lands. Even then, lift irrigation has not made much headway in Orissa. Area irrigated through L.I. projects as percentage of net area sown is only 0.44 at the end of 1972-73.

Lift irrigation as the name signifies involves lifting of water from the wells, ponds or rivers mostly through electric pumpsets.

TABLE 1

PROGRESS OF ELECTRIC PUMPSETS

State	Preplan	End of 1st plan	End of 2nd plan	End of 3rd plan	End of 1969	End of 1979 (Nov)
Andhra Pradesh	NA	NA	17,968	57,225	98,355	2,23,616
Assam	..	..	..	..	1,049	105
Bihar	47	697	3,200	10,660	67,272	80,649
Gujrat	910	2,825	6,963	17,154	48,555	87,003
Haryana	NA	743	3,459	15.640	31,472	1.09,605
Jamu & Kashmir	NA	10	55	122	1,213	318
Keral	NA	NA	2,666	6,957	12,195	81,158
Madhya Pradesh	..	90	773	7,309	27,309	99,888
Tamilnadu	14,373	32,440	1,17,625	25,650	3,70,638	6,31,442
Maharastra	131	294	7,167	44,890	1,07,171	2,63,603
Mysore	2,460	8,003	16,905	42,396	91,275	1,59,618
Orissa	NA	NA	NA	834	2,493	1,354
Punjab	NA	3,095	8,577	25,296	53,433	1,05,340
Rajsthan	30	47	1,100	6,962	16,465	57,545
Uttarpradesh	747	1,629	3,811	NA	81,651	1,79,581
West Bengal	NA	NA	56	437	1,424	1,651

Source : Economic Review of Orissa, 1971, B. S. E.
Orissa State Electricity Board.

The position of Orissa among the states with regard to progress of electric pumpsets is given in table I.

The figures in Table 1 show that there was much progress of electric pumpsets by the end of the 3rd plan in almost all the states except Orissa, West Bengal, Assam and Jammu and Kashmir. Some states, like Tamilnadu, Mysore and Gujrat recorded very high progress in this regard even from the pre-plan period compared to rest of the states. From the latest figures available, it is ascertained that Orissa still lags behind many other states with regard to progress of electric pumpsets.

The Government of Orissa extends its helping hands to expand lift irrigation by way of giving subsidies to the farmers' cooperatives and individuals. The commercial Banks are now-a-days readily financing the agriculturists for purchasing pumpsets in order to install L. I. projects through private initiatives. Besides, the O.S.E.B. helps in drawing electric lines to the cultivators' field. The cultivators of the state should avail of these facilities for their economic upliftment as well as for the economic development of the state as a whole.

Although Orissa lags much behind the other states with regard to possession of electric pumpsets, there has been much progress in this field during recent years as may be noticed from Table 2.

TABLE 2

PROGRESS OF ELECTRIC PUMPSETS IN ORISSA

Period	Number of pumpsets energised
At the end of 3rd plan.	834
1966-67	59
1967-68	100
1968-69	1,500
At the end of 1st 4 years of the 4th plan.	3,925

Source : Economic Review of Orissa, 1971, B. S. E., O. S. E. B.

It may be seen from the above table that the number of electric pumpsets energised during 1967-68 increased by 15 times

in the next year. The number of pumpsets increased from 834 at the end of 3rd plan to 3,925 at the end of 1st four years of the 4th plan. This is in fact a substantial achievement and undoubtedly a healthy sign for the future progress of installation of pumpsets in this state.

Electrification of villages

(i) Inter state comparison : The back-wardness of Orissa with regard to number of pumpsets follows from the fact that this state has not made much progress in the field of village electrification as may be noticed from Table 3.

TABLE 3

PROGRESS OF RURAL ELECTRIFICATION IN DIFFERENT STATES

State	Villages electrified as percentage of total no. of villages
Andhra Pradesh	34.9
Bihar	12.7
Gujrat	27.1
Himachal Pradesh	26.3
Jammu and Kashmir	11.2
Madhya Pradesh	12.9
Maharashtra	39.6
Mysore	41.0
Manipur	10.3
Orissa	10.3
Punjab	54.6
Haryana	100
Rajsthan	13.5
Tamilnadu	83.9
Uttar Pradesh	22.6
West Bengal	11.2
Nagaland	10.8

Source : Orissa State Electricity Board.

Table 3 reveals that Orissa recorded the lowest position among the states with regard to the proportion of villages so far electrified. Of course small states like Assam, Meghalaya and Tripura come next to Orissa in the list. Haryana occupied the highest position followed by Tamilnadu and Punjab.

But the percentage of number of villages electrified to total number of villages is not a good indicator of the progress of rural electrification. As for instance, Haryana with only 6669 villages was in a better position to provide electricity to all the villages whereas the large number of villages (about 7 times that of Haryana) coupled with economic backwardness stood as an obstruction on the way of progress of rural electrification in Orissa.

(ii) Progress of village electrification in Orissa over years

The progress of village electrification over the years 1961-62 to date is shown in Table 4.

TABLE 4

TOTAL NUMBER OF VILLAGES ELECTRIFIED AND NUMBER OF DOMESTIC CONSUMERS IN ORISSA

Year	Total number of villages newly electrified (population less than 10,000) during the year	Cumulative total	Total number of domestic consumers (cumulative)
1961-62	25	25	29791
1962-63	115	140	39663
1963-64	80	220	51275
1964-65	88	308	62361
1965-66	112	420	68943
1966-67	97	517	70109
1967-68	128	645	70765
1968-69	60	705	NA
1969-70	146	853	NA
1970-71	907	1760	NA
1971-72	2288	4048	NA
1972-73	3211	7259	NA

Source : Economic Review of Orissa, 1971, B. S. E.
Orissa State Electricity Board.

It may be seen from Table 4 that the number of newly electrified villages showed an increasing trend over the years, the magnitude of increase being very high during the last three years. The increase in this number reached its peak during the last year

(1972-73). This rate should be enhanced further or at least be continued as such in order to bring the state at par with other developed states within the coming few years. Efforts should also be made to increase the number of domestic consumers of electricity as it is the desired objective of rural electrification.

(iii) Inter-district comparison

The village electrification has not been done uniformly in all the districts of Orissa as may be seen from Table 5.

TABLE 5

PROGRESS OF RURAL ELECTRIFICATION IN DIFFERENT DISTRICTS OF THE STATE

District	Total no. of villages	Number of electrified villages at the end of			Colm. 5 as percentage of colm. 2
		March, 71	March, 72	Jan, 73	
Balasore	3825	132	300	396	10.35
Bolangir	2524	43	161	173	6.85
Cuttack	5883	472	1015	1138	19.34
Dhenkanal	2512	121	376	415	16.52
Ganjam	3883	376	775	878	22.61
Kalahandi	2902	23	35	56	1.92
Keonjhar	1973	62	125	172	8.71
Koraput	5579	55	114	188	3.36
Mayurbhanj	3671	128	292	311	8.47
Phulbani	4471	6	32	42	0.93
Puri	4374	330	697	803	18.35
Sambalpur	3393	86	162	229	6.74
Sundargarh	1584	40	78	182	11.48
Total	46,464	1,874	4,162	4,983	10.27

It may be noticed from the above table that there was a great deal of variation among the districts with respect to progress of rural electrification. The number of electrified villages at the end of January, 1973 as percentage of total number of villages varied from a minimum of 0.93 in Phulbani to a maximum of 22.61 in Ganjam, Cuttack, Dhenkanal, Puri and Sundargarh were other districts where much progress has also been made in this regard. In this context it may be said that it is a difficult task to uniformly distribute the power among the districts as the provision of electricity to a particular district depends upon a large number

of factors such as agricultural base, industrial (small scale) needs, progress of pumpsets etc. of the district. However, all the villages of the state need to be electrified in the long run.

(iv) Inter-village comparison

In Orissa, greater emphasis has been laid on electrification of larger villages compared to the smaller ones. The following table provides the date regarding distribution of electrified villages among various population groups.

TABLE 6

DISTRIBUTION OF ELECTRIFIED VILLAGES AMONG THE POPULATION GROUPS.

Population group.	Number of villages covered under electricity.	Percentage of villages electrified.
0-499	137	0.38
500-999	110	1.50
1000-1999	210	8.36
2000-4999	163	36.06
5000-9999	11	68.75

Source : Economic Review of Orissa, 1971, B.S.E.

Table 6 shows that the proportion of electrified villages increased with the increase in size of population. In percentage terms, the achievement was almost negligible in the first three population groups. The percentage of villages, electrified increased to about 36 in the population group 2000 to 4999 and further to about 69 in the highest population group.

(v) Rural population cover under electricity

Table 7 illustrates the percentage distribution of rural population covered under electricity in the districts of Orissa as on 31-10-73.

It is well evident from Table 7 that the population covered by electricity as percentage of total rural population was the highest in Ganjam district and the lowest being recorded in Phulbani district. Since the coverage of population

TABLE 7

PERCENTAGE OF RURAL POPULATION COVERED BY ELECTRICITY IN ORISSA AS ON 31. 10. 73

Name of the district.	Total rural population	Population covered by electricity.	Percentage of colm. (3) to colm. (2)
Balasore	1730350	279450	16.15
Bolangir	1176994	197375	16.77
Cuttack	3522055	1009013	28.65
Dhenkanal	1242102	351317	28.28
Ganjam	2033952	967446	47.56
Kalahandi	1107316	73647	6.65
Keonjhar	888167	170331	19.18
Koraput	1876022	240996	12.85
Mayurbhanj	1394249	201574	14.46
Phulbani	602107	29052	4.83
Puri	2111712	593567	28.11
Sambalpur	1623121	318847	19.64
Sundargarh	791073	215051	27.18
State	20099220	4647666	23.12

Source : Orissa State Electricity Board Census of India, 1971, Series-1 India, Paper 1 of 1972 Final population.

is less than 30 per cent in almost all the districts, emphasis should be given to cover more percentage of population in all the districts and at the same time more attention should be paid to the district with low coverage.

Final progress

The financial target and achievement under each of the foregoing plans have been shown in Table 8.

TABLE 8

PLANWISE FINANCIAL TARGET AND ACHIEVEMENT IN ORISSA

(Rupees in lakhs)

Plan period	Target	Actual expenditure	Actual as percentage of target.
1st Five Year Plan	46.19	77.82	158.20
2nd Five Year Plan	134.00	131.23	97.93
3rd Five Year Plan	335.00	373.87	111.60
1966-67	120.00	110.05	91.71
1967-68	88.00	90.64	103.00
1968-69	70.00	50.13	71.61
4th Five Year Plan	915.00	2347.33	256.54

The above table reveals that during the 1st Five Year Plan, the expenditure on electricity was about one and half times of the target, but in the subsequent two Five Year Plans and in two annual plans, the expenditure was more or less equal to the target. This shows that targets were fixed more realistically in the latter plan in the light of experience gained from the First Five Year Plan. However, during the Fourth Five Year Plan, the expenditure was about two and a half times greater than the target. This resulted from the fact that greater emphasis was laid on the rural electrification during this plan.

Rural electrification programme in the Fifth Plan*

It has been proposed to electrify fifteen thousand additional villages including 2312 of the minimum needs programme during the 5th Five Year Plan. Besides 70,000 Lift Irrigation points have been proposed to be energised during this period. A network of transmission lines to the load growth centres will also be established. It has been estimated that 40 per cent or more of the rural population would be covered by electricity at the end of 4th plan in 5 districts namely, Cuttack, Dhenkanal, Ganjam, Puri and Sundargarh and the remaining 8 dictricts where the achievement would be to the tune of 25 per cent by the end of 4th plan will achieve 40 percent level at the end of 5th plan.

Financial provision has already been made to achieve the target as mentioned above. The financial target proposed in the 5th plan is as under.

	Rupees in lakhs
Estimated cost.	5358
5th plan outlay (tentative)	5300
Capital expenditure component of the outlay.	5300
Foreign exchange component of the outlay.	—

Conclusion

Whatever may be the criterion of development in the field of rural electrification, Orissa lags much behind the other states.

* Fifth Five Year Plan of Orissa (Draft).

However, the recent progress in the field and the 5th plan proposals are quite encouraging. Adequate emphasis should be laid on the proper execution of the rural electrification work so that the state can come to the level of other developed states in near future. The farmers and the other rural people should also participate in the programme by way of proper utilisation of electric power in the agricultural field, small scale industries and home consumption for the successful implementation of the programme.

Rural Electrification : Its Growth and Problems

Shri Prahallad Panda

The success of development programmes of a nation depends largely on a well conceived plan for the development of infrastructure and particularly that of electricity. Power consumption has been regarded as a yard-stick for gauging the progress of a nation. The Planning Commission, for that reason, have become increasingly interested in taking to the rural sector. Programmes for supplying power to towns and villages were chalked out since the Second Five Year Plan.[1] Provision was made for extending power to 10,600 additional towns and villages of which 8,600 had population below 5,000. The programme was expanded considerably in the Third Five Year Plan which provided that 20,000 such towns and villages were to be newly electrified.[2] Of these, 100 were to be the towns with population between 10,000 and 20,000, 1,300 with population between 5,000 and 10,000 and the remaining 18,600 with population below 5000. The third plan made a specific provision that by 1966, all cities, towns and villages with a population exceeding 5,000 (1951 Census) will be electrified and also 50 P. C. of the villages with population between 2,000 and 5,000. Thus the number of towns and villages electrified were to be increased from 23,000 in 1960-61 to 43,000 by 1965-66. These programmes of electrification are linked with schemes for including agricultural load and for cottage and small scale industries. The aim of the third plan was to develop efficient small-scale industries in small towns and in rural areas so as to increase employment opportunities, raise incomes and living standards and bring about a more balanced and diversified rural economy. Electricity was considered quite necessary to re-organise the traditional industries and to introduce small industries based on steadily improving techniques, which are capable of meeting the new needs of the expanding rural economy. In several States, electricity is being increasingly used for lift-irrigation

1. Second Five Year Plan Government of India Planning Commission.
2. Third Five Year Plan. Ch. IV. Page 403

and the scope for this is likely to increase rapidly. The third plan provided Rs. 105 crores for rural electrification. But much larger outlays and more rapid development in rural electrification are envisaged for the Fourth and Fifth Plans.[3] One per cent of the places in India comprising 4,500 places have populations exceeding 5,000. They house under 18 per cent of the population. About 68% of the population live in places with a population less than 2,000. In most of these places electricity is needed for lift-irrigation, small industries, drinking water supply and street lighting.

Rural electrification corporation

In view of the importance of the rural electrification programme, the Reserve Bank of India seems to be eager to play an active role in its promotion. It appointed the All India Rural Credit Review Committee, headed by Sri B. Venkatappiah, Member of the Planning Commission for reviewing the supply of rural credit for the promotion of schemes including rural electrification. This committee recommended that a Rural Electrification Corporation should be set up to see that electricity developes uniformly all over the country. The Review Committee has estimated that by 1973-74, about 7 million tons of food can be raised by energising 12.5 lakhs additional pump-sets. This target can be realised only when the electricity lines are extended to the rural areas and if the State Electricity Boards are able to find resources for the same. The long distance supply of electricity, the wide diffusion of villages, and low tariff rates are some of the problems faced by the Electricity Boards. The Review Committee examined all possible source of funds for rural electrification schemes and found that there will be a gap of Rs. 300 crores between the needed and available funds. According to the committee the Rural Electrification Corporation should be created by the Central Government to make up this deficit. Its funds should be utilised for meeting the financial requirements of the Rural Electrification Schemes in the priority areas, providing financial accommodation to the needy Electricity Boards and meeting a part of the block capital of the schemes run by co-operatives. But before advancing funds, the Corporation should examine the economic viability of the schemes to be financed. The Committee further suggested to the Electricity Boards to select the special rural electrification schemes and issue

3. The Crisis of Indian Planning, Edited by Paul Streeten and Michael Lipton, Page 176.

a series of debentures or bond for financing them. Each such issue may have both shorter and longer periods of maturity. The short term maturity bonds may be subscribed by the local people, but the long period bonds need to be subscribed entirely by the Rural Electrification Corporation at a low interest rate. Accordingly the Corporation was set up to boost the Rural Electrification Programme, and it started with the financing of 88 schemes just within one year of its inception. It has financed 38 schemes in the backward areas and 5 schemes run by co-operatives by 1970. The Fourth Five Year Plan provided Rs. 445 crores to meet the growing requirements of power to promote ground water resources both for agriculture and industries and energisation of agricultural pump-sets. The number of pump-sets meant for agriculture increased from 18,700 in 1951 to 14.78 lakhs in 1970 (October). It was proposed that by October, 1970, 18% of the total number of villages and 38% of rural population of the country would get the benefit of rural electrification. The State of Haryana was able to take electricity to every one of its villages by that time.[4]

Progress of power consumption in Orissa

Since the beginning of the First Plan, efforts were being made to promote power generation in Orissa. At the end of 1950, the installed capacity was 4.6 M.W. in public utility power stations and 5 M.W. in industry owned power stations.[5] It increased to about 260 M.W. by the end of the Second Plan and 310 M.W. at the end of the Third Plan. It was expected to rise to 920 M.W. by the end of the Fourth Plan. Orissa's share in the country's installed capacity increased from 0.27% in 1950 to 3.6% by 1960-61. The two major generation schemes that were started during the Third Plan were Talcher Thermal Scheme and Balimela H. E. Scheme. The per capita power consumption per annum in Orissa was 7.77 K.W. H. in 1957-58, 65.52 K.W.H. in 1963-64 and is expected to rise to 190 K.W.H. after the completion of the Balimela Project.[6] The rise in per capital consumption between 1957-58 and 1963-64 was 87%

Progress of rural electrification in the State

Out of 400 villages proposed to be electrified during the Third Plan, 367 villages had been electrified by the end of 1965.

4. 'S. B. I. monthly Review', February 1969.
5. 'The Economic Base of Orissa for the Fourth Five Year Plan' 1968.
6. 'Orissa Review' Independence Day Special, 1971.

The Government proposed to electrify 150 villages at a cost of Rs. 110 lakhs in 1966-67. The programme of rural electrification was reoriented to lay greater emphasis on lift irrigation. In view of greater demand for power, steps were taken to survey the schemes like Manibhadra, Indravati H. E. Project and expansion of the Talcher Thermal Scheme. By the end of the Fourth Plan, it is proposed to take electricity to 17% of the villages as against all India figure of 18 % for the year 1970. But by 1971 only 3.8 % of the villages of the State received the benefits of rural electrification. The Government of Orissa have proposed to obtain a loan of Rs. 20 crores from the Rural Electrification Corporation to promote electrification, and provided Rs. 6.05 crores for that purpose during the Fourth Plan. The State Electricity Board has also submitted 10 Rural Electrification Schemes for Rs. 410.858 lakhs out of which, 7 schemes have been sanctioned by 1971. In the case of lift irrigation, 471 projects were taken up, out of which 71 proved uneconomic due to high maintenance cost and were subsequently given up. Out of the remaining 400 projects, 314 were completed and 25 were energised by 1968-69. The remaining projects were carried over to the Fourth Plan.

The progress of rural electrification in the State by January, 1973 can be judged from the following table.

Districts	Total Number of villages	Number of villages electrified
Balasore	3825	396
Bolangir	2524	173
Cuttack	5883	1138
Dhenkanal	2512	415
Ganjam	3883	878
Kalahandi	2902	56
Keonjhar	1973	172
Koraput	5579	188
Mayurbhanj	3671	311
Phulbani	4471	42
Puri	4374	803
Sambalpur	3393	229
Sundergarh	1580	182
Total	46,464	4983.

As is clear from the above table, the rate of progress of electrification is not uniform throughout the State. It is higher in Ganjam, Cuttack, Puri and Dhenkanal districts than in others. The Government of Orissa is alert about this uneven progress. It has directed the State Electricity Board to electrify 3000 villages and execute 1000 lift irrigation schemes during the current year. Efforts are being made to take electricity to 365 Adivasi and Harijana villages. With implementation of this, 14/15 % of the villages of the state would get the benefits of the rural electrification by the end of current year. At present 10 % of the villages of the State have got electrification as against 100% in Haryana, 96% in Tamil Nadu, 83.9% in Kerala, 54.6% in Punjab, 41% in Mysore, 39.% in Maharastra, 34.9% in Andhra Pradesh, 27.1% in Gujrat, 26.3% in Himachal Pradesh, 22.6 in U.P., 13.5% in Rajasthan, 12.9% in M. P., 12.7% in Bihar, 11. 2 % in Jammu & Kashmir, 10.8% in Nagaland and 10.3% in Manipur. The States that fall short of Orissa level are Assam, Meghalaya and Tripura. Naturally the state has not made much headway in utilising electricity in lift irrigation. The number of pump sets energised amounted to only 1354. But the corresponding figures were 6,31,442 for Tamil Nadu, 2,63, 603 for Maharastra, 2,23, 656 for Andhra Pradesh, 1,79,581 for U.P., 1,59,618 for Mysore, 1,29, 605 for Haryana, 1,05, 340 for Kerala, 80,649 for Bihar and 57,545 for Rajasthan.

The total number of villages which were electrified in the State were 25 during the First Plan, 93 during the 2nd plan and 534 during the 3rd plan. But the Fourth Plan witnessed considerable progress in this direction. During the year 1971-72 more than four thousand villages were electrified. The Small Farmers Development Agencies operating in the districts of Ganjam, Puri, Dhenkanal, Cuttack and Keonjhar are doing useful service in the field of rural electrification.

Three backward districts[7]

The per capita consumption of electricity was 79.44 K.W.H. for the State of Orissa. But the corresponding figures for the most backward three districts, Bolangir, Kalahandi and Phulbani were as low as 2.150, 1.534 and 0.399 K.W.H. respectively. The major part

7. 'Survey of the backward districts of Orissa' conducted by the National Council of Applied Economic Research, New Delhi, 1969. Page 59.

of the electricity now consumed in these three districts is utilised for lighting houses and commercial establishments and for street lighting. A very small part of the electricity is used for irrigation.

Findings

(1) The less developed states like Orissa are largely rural and the urban centres in them are small in number. In such areas demand for electricity cannot be easily created even if it is available. Those who are engaged in the development schemes suggest that special programmes should be undertaken to educate people about the use of electricity and benefits accruing from its use. The programme developed by the Rural Electrification Administration of the Tennessee Valley Authority 30 years ago can be cited as an illustration. Rural Electrification has been quite encouraging scheme in irrigation in States like Madras, Haryana, Punjab and more recently in U.P. and Bihar. Its restricted use in Orissa is mainly due to lack of education about its utility.

(2) The rural electrification schemes in the State have been uneconomic, because of the distances between villages, low level of electricity consumption and seasonal character of its requirements. Hence the generating capacity is not even fully utilised. It is for this reason, it is suggested that before supplying electricity to the rural sector, potential development schemes should be chalked out by the district authorities. There is need for a foreward planning for rural electrification over a few years ahead of the execution of the work. The Planning Commission has appropriately suggested that the State Electricity Boards should take the initiative in co-ordinating the rural electrification schemes with those of small industries in the rural sector. The role of the Panchayat Samities as well as Gram Panchayats in most cases seems to be quite passive, and they lack vision and prior planning on the utilisation of electricity. The response of the people in paying duties for the use of electricity particularly for street lighting seems to be poor. Hence the best thing would be to link rural electrification to schemes of production of agricultural and rural industries.

(3) The provision of 'subventions' from the State Governments to meet the special schemes of rural electrification is particularly suitable to the State of Orissa, because of the

uneconomic nature of the undertakings. In view of the progress of Green Revolution and the need for infrastructure, the schemes of rural electrification need to be encouraged even if there may be loss initially.

(4) Another sound agency keen on the permanent improvement of the rural areas is the Co-operative Land Development Bank of Orissa. This Bank in collaboration with the other nationalized commercial banks can easily participate increasingly in the viable schemes of electrification. The commercial banks in their zeal to realise the targets are now showing interest in extending liberal credit to these schemes.

(5) It is the responsibility of the Central Electricity Authority to see that electricity is developed in a co-ordinated and balanced manner all over the country. The states like Orissa frequently subject to drought and famine should get special treatment. Rural electrification would serve as a preventive and precautionary measure to meet the unforeseen natural calamities like drought and famine. The Third Plan report indicates that the Electricity Boards of the backward states show little improvement in their financial position and that they should earn reasonable surplus for future development. The Government of Orissa should review the working of the Orissa Electricity Board more frequently and take steps to ensure that the electricity undertakings yield adequate returns.

(6) An allied problem is the pricing of electricity. Economists like John Healey suggest that the prices for electricity should cover the full cost of generation and distribution. In 1963 the State Electricity Boards were instructed to charge prices as to earn a return of 11 % of the invested capital. The justification is that the State Boards will be able to meet a part of the finance of their future schemes of development from such returns. The Orissa State Electricity Board is getting loan from L. I. C. at the rate of 7.9 % and from the Rural Electrification Corporation at the rate of 5 to 7 %. A little higher price for commercial undertakings may not reduce the consumption of electricity. Because in industrial and commercial sectors electricity cost constitute a very small part of the total cost. But in the rural areas the high price of electricity would reduce its comsump-

tion. Moreover, power in the urban areas has more than one use and in the rural areas its purpose is specific. Price of electricity should be reasonably modest in rural areas particularly in lift irrigation.

(7) The electricity industry is subject to the law of increasing returns and economics of large scale production. The larger the quantum of electricity generated, the less would be the incidence of the fixed charges in the unit of generation. In view of higher demand for electricity both in the urban and rural sectors of the State of Orissa, the State Electricity Board will find it advantageous in raising the generating capacity of the existing units and sell it at a lower price to the rural sector.

(8) Finally there are some who thinks that it is not wise to divert a substantial part of the state's stock of electricity to the rural sector at a time when it is so urgently needed by the industries, many of which are unable to run at full capacity owing to inadequate power supply. It is argued that electricity can be more economically and profitably used in the Industries. They also mention that the contribution of rural electrification to development is largely intangible and gives only a psychological satisfaction, and a backward state like Orissa can ill afford to bear the cost of it. The argument may be valid viewed strictly from the economic point of view, but the non-economic considerations cannot be easily ignored. The role of rural electrification as a factor promoting a balance between the growth of the rural and urban sectors cannot be denied.

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FORM NO. I

(*See Rule 3*)

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